E.J. Aird and R. Hvirf

Phase 1 & 2 Contamination Assessment

Proposed Residential Subdivision
Winders Lane, Lochinvar NSW

27 June 2017

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Phase 1 & 2 Contamination Assessment

Prepared for
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Executive summary

Pulver Cooper & Blackley Pty Ltd (PCB), on behalf of E.J. Aird and R. Hvirf, is preparing a development application (DA) for a residential subdivision at Lochinvar, NSW. The proposed subdivision is located off Winders Lane and will occupy the following lots:

- Lot 2 DP 718712;
- Lot 32 DP 1132263;
- Lot 310 DP 1034974; and
- Lot 311 DP 1135580.

For the purposes of this assessment, the "site" is defined as the area occupied by the four lots. The area of the site is approximately 130 hectares.

Coffey previously carried out a Phase 1 & 2 Contamination Assessment (CA) of Lot 32 in 2015, for a previous DA submission. As the site has been reconfigured to include Lots 2, 310 and 311 (which have not been previously assessed), PCB requested Coffey to carry out a Phase 1 & 2 CA for the new site configuration (the area covered by the 'Masterplan') in order to support the DA. This included supplementing the findings of Coffey's (2015) CA.

The objectives of the CA were to:

- Assess the current site conditions on Lot 32, including changes (such as new areas of concern) since Coffey's (2015) CA;
- Identify potentially contaminating activities that are currently being performed on Lots 2, 310 and 311, and that may have been performed on these lots in the past;
- Assess Areas of Environmental Concern (AEC's) and Chemicals of Concern (COC's) for the site, and develop a Conceptual Site Model (CSM);
- Provide an assessment of potential soil, sediment and surface water contamination at the site;
- Assess the suitability of the site for the proposed residential subdivision (from a contamination perspective); and
- Provide recommendations for remediation and/or management, as required.

In order to achieve the above objectives, the following scope of works was undertaken:

- A desktop study and historical review of past activities at the site with the potential to cause contamination, including:
  - A review of the Coffey (2015) CA;
  - A review of historical ownership of the site – Lots 2, 310 and 311;
  - A review of aerial photography from the past 50 years;
  - A review of the Section 149 Planning Certificate for the site – Lots 2, 310 and 311; and
  - A review of NSW Environmental Protection Authority (EPA) notices under the Contaminated Land Management Act (1997);
- An assessment of the site topography, geology and hydrogeology including site drainage and regional groundwater usage through a search of registered groundwater bores;
- A site walkover of the site to help identify AECs and potential COCs, and changes to Lot 32 since Coffey's (2015) CA;
- A sampling programme, targeting the AECs identified, including:
  - Surface soil sampling; and

    - Collection of surface water samples from ponds;
- Laboratory analysis of selected soil samples for the COCs identified; and
- Preparation of this Phase 1 & 2 CA report.

The Coffey (2015) CA and this current CA has identified a number AECs. These relate to the residential houses and garden beds on Lot 2, Lot 310 and Lot 311, the ponds on Lot 32, Lot 310 and Lot 311, former cropping/cultivated areas on Lot 32, drainage lines on Lot 311, an oil-stained area on Lot 310 and a stockpile on Lot 32.

The risk of contamination inferred at these AECs was low. The site walkover identified that the only change on Lot 32, since 2015 was a fill stockpile, approximately 15m^3 in volume, located near the boundary of Lot 311. The farm waste inside the shed was still present.

The laboratory results indicated that concentrations of contaminants were recorded below the adopted investigation levels, with the exception of TRH (C16-C34) in sample SS20 (which exceeded the adopted ESL). The 95% UCL calculations for TRH (C16-C34) showed that the arithmetic average concentration across the site was below the ESL.

Concentrations of some heavy metals were recorded above the adopted investigation levels in the surface water samples analysed. The low concentrations of heavy metals are probably indicative of the impact from past herbicide use, and/or background levels.

Based on the site history review, field observations and laboratory results, the potential for soil and/or surface water contamination to be present at the site, at levels requiring additional investigations, remediation and/or management, is considered to be low. The site (Lots 2, 32, 310 and 311) in its current configuration, is suitable for the proposed residential development provided the recommendations contained in this report and the recommendations provided in the Coffey (2015) CA are implemented

The recommendations for the site are therefore:

- The farm waste inside the shed Lot 32 is removed and the surface soils inside the shed observed. If evidence of potential contamination is identified (such as stained or odorous soils), an environmental consultant should be contacted to collect additional surface soil samples.
- A Construction Environmental Management Plan (CEMP) is implemented, prior to earthworks commencing, in order to appropriately manage the on-site and off-site disposal of soil, sediment and water.

Whilst the soils and sediments are suitable for re-use on site, should they be disposed off-site, then they would need to be classified according to the NSW EPA (2014) *Waste Classification Guidelines*. Additionally, management of the disposal and/or re-use of the pond water disposal may need to be managed during re-development.

This report must be read in conjunction with the attached sheet entitled *"Important Information about your Coffey Environmental Report"*

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Important Information about your Coffey Environmental Report

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Abbreviations

ACM	Asbestos Containing Material
AEC	Area of Environmental Concern
AHD	Australian Height Datum
ALS	Australian Laboratory Service
ANZECC	Australian and New Zealand Environmental Conservation Council
C6-C36	Hydrocarbon chainlength fraction
bgs	below ground surface
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
CA	Contamination Assessment
CEC	Cation Exchange Capacity
COC	Chemical of Concern
CRC CARE	Corporate Research Centre for Contamination Assessment and Remediation of the Environment
CSM	Conceptual Site Model
EC	Electrical Conductivity
EIL	Ecological Investigation Level
ESL	Ecological Screening Level
Eurofins	Eurofins Environment Testing Australia Pty Ltd, trading as Eurofins MGT
HIL	Health-based Investigation Level
HSL	Health Screening Level
ID	Identification
LOR	Limit of Reporting
µg/L	micrograms per litre
mg/kg	milligrams per kilogram
NATA	National Association of Testing Authorities
NEPC	National Environmental Protection Council
NEPM	National Environment Protection (Assessment of Site Contamination) Measure
NSW EPA	Environmental Protection Authority of New South Wales
NSW OEH	Office of Environment and Heritage of New South Wales
OCP	Organochlorine Pesticide
OPP	Organophosphorus Pesticide
ppm	parts per million

QA	Quality Assurance
QC	Quality Control
RPD	Relative Percent Difference
SOP	Standard Operating Procedures
SS	Surface Soil Sample
SW	Surface Water Sample
TEQ	Toxicity Equivalent Quotient
TRH	Total Recoverable Hydrocarbon

1. Introduction

1.1. General

Pulver Cooper & Blackley Pty Ltd (PCB), on behalf of E.J. Aird and R. Hvirf, is preparing a development application (DA) for a residential subdivision at Lochinvar, NSW. The proposed subdivision is located off Winders Lane and will occupy the following lots:

- Lot 2 DP 718712;
- Lot 32 DP 1132263;
- Lot 310 DP 1034974; and
- Lot 311 DP 1135580.

For the purposes of this assessment, the "site" is defined as the area occupied by the four lots. The area of the site is approximately 130 hectares. The site location is shown on Figure 1.

The proposed development will involve the creation of approximately 1,100 lots with associated roadways and infrastructure (such as stormwater drainage). Discussions between PCB and Maitland City Council (Council) have indicated that the DA will be a staged process, with approval requested for the overall 'Masterplan' and operational consent issued for Stage 1 of the subdivision (Stage 1 is located adjacent to the New England Highway near Aird's of Lochinvar).

Coffey previously carried out a Phase 1 & 2 Contamination Assessment (CA) of Lot 32 in 2015 (Reference ENAUWARA04581AA-R01 dated 4 February 2015), for a previous DA submission. The CA included a desktop study and site history review, a site walkover, surface soil and water sampling, laboratory analysis and reporting. Coffey concluded that the potential for contamination to be present on Lot 32 was low, and Lot 32 was suitable for the proposed residential subdivision provided the following recommendations were carried out:

- The farm waste inside the shed on Lot 32 was removed and the surface soils inside the shed observed for potential contamination; and
- A Construction Environmental Management Plan (CEMP) was implemented, prior to earthworks, in order to manage the on-site and off-site disposal of soil, sediment and water.

As the proposed development has now been reconfigured to include Lots 2, 310 and 311 (which have not been previously assessed), PCB requested Coffey to carry out a Phase 1 & 2 CA for the new development configuration (the area covered by the 'Masterplan') in order to support the DA. This included supplementing the findings of Coffey's (2015) CA.

This report was prepared in accordance with the relevant sections of the following documents:

- NEPC (2013) National Environmental Protection (Assessment of Site Contamination) Measure (ASC NEPM); and
- NSW OEH (2011) Guidelines for Consultants Reporting on Contaminated Sites.

This report must be read in conjunction with the attached sheet entitled "*Important Information about your Coffey Environmental Report*".

1.2. Objectives

The objectives of the CA were to:

- Assess the current site conditions on Lot 32, including changes (such as new areas of concern) since Coffey's (2015) CA;
- Identify potentially contaminating activities that are currently being performed on Lots 2, 310 and 311, and that may have been performed on these lots in the past;
- Assess Areas of Environmental Concern (AEC's) and Chemicals of Concern (COC's) for the site, and develop a Conceptual Site Model (CSM);
- Provide an assessment of potential soil, sediment and surface water contamination at the site;
- Assess the suitability of the site for the proposed residential subdivision (from a contamination perspective); and
- Provide recommendations for remediation and/or management, as required.

1.3. Scope of works

In order to achieve the above objectives, the following scope of works was undertaken:

- A desktop study and historical review of past activities at the site with the potential to cause contamination, including:
  - A review of the Coffey (2015) CA;
  - A review of historical ownership of the site – Lots 2, 310 and 311;
  - A review of aerial photography from the past 50 years;
  - A review of the Section 149 Planning Certificate for the site – Lots 2, 310 and 311; and
  - A review of NSW Environmental Protection Authority (EPA) notices under the Contaminated Land Management Act (1997);
- An assessment of the site topography, geology and hydrogeology including site drainage and regional groundwater usage through a search of registered groundwater bores;
- A site walkover of the site to help identify AECs and potential COCs, and changes to Lot 32 since Coffey's (2015) CA;
- A sampling programme, targeting the AECs identified, including:
  - Surface soil sampling; and
  - Collection of surface water samples from ponds;
- Laboratory analysis of selected soil samples for the COCs identified; and
- Preparation of this Phase 1 & 2 CA report.

2. Site description

2.1. Site location and identification

General site information is provided below in Table 1.

Table 1 – Summary of site details

Site Location	The site is located off Winders Lane, Lochinvar NSW. The site location is shown on Figure 1 and the site layout is shown on Figure 2.
Approximate Site Area	130 hectares.
Title Identification Details	The site occupies: • Lot 2 DP 718712; • Lot 32 DP 1132263; • Lot 310 DP 1034974; and • Lot 311 DP 1135580. The site is located within the Parish of Gosforth and the County of Northumberland.
Current Land Zoning	Under the Maitland City Council Local Environmental Plan 2011, the site is zoned as R1 – General residential and RU2 – Rural landscape.
Previous Landuse	Historical and anecdotal evidence indicates that the site was formerly used for cattle grazing, rural residential and localised commercial activity (possibly orchards or market gardens).
Current Landuse	Rural-residential land use including grazing land.
Proposed Landuse	Residential subdivision including approximately 1,100 lots with associated roadways and infrastructure (such as stormwater drainage, sewer etc).
Adjoining Site Uses	• Semi –rural residential properties to the east and west; • Winders Lane to the east; • New England Highway, followed by semi-rural residential properties to the north; and • Grazing farmland and dams to the south.
Site Coordinates	The site is located approximately at 32°42’33”S, 151°27’44’’E.

2.2. Site topography and drainage

2.2.1. Lot 32

Topographical and site drainage information for Lot 32 is included in Coffey’s (2015) CA.

Reference to the 1:25,000 Topographic Map for Maitland (http://maps.six.nsw.gov.au/) indicates that Lot 32 is situated in an area of low undulating hills, at an elevation of 50m to 60m AHD.

During the site walkover carried out in 2015, the site surface was observed to be well grassed and, generally rising towards the south-eastern corner of the site. Three dams were observed to collect water from a number of water catchments on the lot.

Surface water was expected to infiltrate into site soils, or drain towards the dams on the lot. Stormwater that drains from the site was anticipated to flow to the north-west towards Lochinvar

Creek, located approximately 1.5km north-west of the lot, and eventually to the Hunter River, located approximately 3.8km north-west of the lot.

2.2.2. Lot 2, Lot 310 and Lot 311

Reference to the 1:25,000 Topographic Map for Maitland (http://maps.six.nsw.gov.au/) indicates that the Lots 2, 310 and 311 are situated in an area of low undulating hills, at an elevation of 40m to 60m AHD.

During the site walkover, the ground surface of Lots 2, 310 and 311 was observed to be well grassed and, generally slopes down to the east and west. Two ponds collect water from a number of water catchments on site

Surface water would be expected to infiltrate into site soils, or drain towards the ponds on-site. Stormwater that drains from the site is anticipated to flow to the north-west towards Lochinvar Creek, located approximately 1.5km north-west of the site, and eventually to the Hunter River, located approximately 3.8km north-west of the site.

2.3. Regional geology and soils

Based on the 1:100,000 scale Newcastle Geology map, the site is judged to be underlain by deposits of the Lochinvar Formation comprising of basalt, siltstone and sandstone. These deposits are in turn underlain by bedrock belonging to the Gyarran Volcanics of the Dalwood Group of Early Permian age.

The Newcastle 1:100,000 Soil Landscape Map indicates that the site is situated in an area of undulating low hills. Soils include moderately deep poorly drained podzols and structured loams. These soils are characterised by a high water erosion hazard, foundation hazard, mass localised movement, seasonal waterlogging and high acidity.

2.4. Hydrogeology

Groundwater beneath the site is anticipated to be present in semi-confined or confined aquifers at depths greater than 10m below ground surface (bgs). Regional groundwater flow direction is expected to be to the north or north-west towards Lochinvar Creek, located approximately 1.5km to the north-west of the site and discharge to the Hunter River located approximately 3.8km north-west of the site.

A search of the NSW Office of Water for registered groundwater bores located within a 1 km radius of the site was undertaken. The search revealed that there are four bores registered within this radius. The details of the registered bores with information available are summarised below in Table 2. A copy of the groundwater bore search is provided in Appendix A.

Table 2 – Summary of groundwater bore data

Bore ID	Status	Purpose	Approximate Distance From Site	Standing Water Level (m bgs)
GW071829	Supply Obtained	Town Water Supply	50m north	Not recorded
GW072724	Not recorded	Stock, Domestic, Farming	50m north	Not recorded
GW200934	Active / Supply Obtained	Domestic	430m south	12.00
GW201356	Active	Monitoring Bore	900m south	Not recorded

2.5. Acid sulfate soils

Reference to the ASS Risk Map for Greta indicates that the site is located in an area where there is no known occurrence of ASS.

3. Site history review

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

- A review of the Coffey (2015) CA and other previous assessments;
- A review of historical ownership for Lots 2, 310 and 311;
- A review of aerial photography from the past 50 to 60 years;
- A site walkover to help identify current and previous activities carried out on the site, to help identify AECs and COCs and to identify surrounding land uses, including changes to Lot 32 from the Coffey (2015) CA;
- Interviews with people familiar with the site history;
- A review of Section 149 Planning Certificates for lots 2, 310 and 311 obtained from Maitland City Council; and
- A review of NSW EPA notices applying to the site and nearby properties.

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

3.1. Review of previous assessments

3.1.1. Review of Coffey (2015) contamination assessment

Coffey was commissioned by PCB to carry out a Phase 1 and 2 CA for Lot 32 in 2015 (Reference ENAUWARA04581AA-R01 dated 4 February 2015). PCB requested the CA, in order to support a DA for the proposed residential subdivision, to be lodged with Maitland City Council. Lot 2 was also initially included in the CA, but was later removed from the proposed residential subdivision layout and was therefore not assessed at the time.

The objectives of the assessment were to identify potentially contaminating activities that were being performed on Lot 32, and that may have been performed in the past, develop a preliminary CSM for Lot 32, and provide a preliminary assessment of soil, sediment and surface water at Lot 32.

In order to meet the objectives, for Lot 32, Coffey undertook a site history desktop study, a site walkover, collection of surface soil, sediment and surface water samples, and laboratory analysis of the collected samples for a number of potential chemicals of concern, including heavy metals, hydrocarbons, herbicides and pesticides.

The site history review showed that the majority of Lot 32 has been used for cattle grazing with two areas used for cropping about 40 years ago. At the time herbicides were used to control weeds but this practice ceased in the early 1970s.

Anecdotal evidence suggested that no chemicals were mixed on site and thus impact from herbicide use on the cropping areas would not contain hot spots. A broad grid was considered appropriate over the main cropping area to assess average concentrations and 95% upper confidence level, if needed.

The concentrations of chemicals of concern in soil and sediment were below the adopted residential investigation levels. Some heavy metal impact was noted in the surface soil and pond sediments probably from the historic use of herbicides. This was evident by the consistency in the concentrations of copper, chromium and zinc, both in the surface soils and the pond sediments. The heavy metal concentrations, though elevated, were below the adopted human health and ecological criteria.

Based on the site history review, field observations and laboratory results, the potential for soil and/or surface water contamination to be present at the site, at levels requiring additional investigations, remediation and/or management, was considered to be low. Coffey therefore concluded that Lot 32, in its current configuration, was suitable for the proposed residential development provided the following recommendations were implemented:

- The farm waste inside the shed was removed and the surface soils inside the shed observed. If evidence of potential contamination was identified (such as stained or odorous soils), an environmental consultant should be contacted to collect additional surface soil samples.
- A CEMP was implemented, prior to earthworks commencing, in order to appropriately manage the on-site and off-site disposal of soil, sediment and water.

3.1.2. Barker Hale Pty Ltd (2007) preliminary contamination site investigation and urban capability assessment

A Preliminary Contamination Site Investigation and Urban Capability Assessment was prepared by Barker Hale (Aust) Pty Ltd (BH) in 2007 (Reference Report 70092 dated 7 February 2007 – BH (2007)). Coffey has carried out a review of this investigation as part of our site history review.

The investigation carried out by BH (2007) is summarised below:

- The BH 2007 assessment was completed for a property about 90ha in area and included Lots 18 and 19 FP976397, Lot 1 DP567712, Lots 1 and 3 DP718712 and Part Lot 311 DP1034974. Part of the BH (2007) study area is situated on the site assessed in this CA.
- The preliminary contamination investigation carried out by BH included soil sampling from 10 test pits. A site plan showing the locations of the test pits was attached to the BH report.
- Samples were analysed for total recoverable hydrocarbons, benzene, toluene, ethylbenzene and total xylenes, heavy metals, pesticides, pH and electrical conductivity.
- The results were compared to investigation levels derived from the following sources:
  - NEPC (1999) National Environmental Protection Measure – Schedule B(1): Investigation Levels for Soil and Groundwater;
  - NSW EPA (1994) Guidelines for Assessing Service Station Sites; and
  - NSW EPA (2005) Guidelines for Assessing Orchards and Former Market Gardens.

  Coffey notes that these publications have since been superseded by the NEPC (1999) *National Environmental Protection Measure (NEPM) – Assessment of Contamination 2013 Amendment (ASC NEPM 2013).*
- The laboratory results indicated that concentrations of total recoverable hydrocarbons (C15-C28 Fraction) exceeded the investigation level adopted by BH in test pit TP1 at approximately 0.5m depth. Based on an anticipated subsurface clay profile, this result also exceeds the respective Health Screening level (HSL) in the 2013 NEPM for residential land use. This test pit was located outside the boundaries of the site assessed during Coffey's current assessment.
- Concentrations of other contaminants were recorded below the investigation levels adopted by BH.

Coffey notes that the preliminary site contamination assessment carried out by BH was not carried out in accordance with the NEPM (2013) or the NSW EPA (1997 and 2011) *Guidelines for Consultants Reporting on Contaminated Sites*. There was no historical titles search, historical aerial photo search, search of EPA website, or discussion of geology, hydrogeology or sensitive receptors. As a result there was no conceptual site model (CSM) nor an indication of the likely areas of environmental

concern. The intrusive investigation was carried out on an area outside the current subdivision layout and as such the laboratory results are of limited value.

3.2. Historical titles search

Historical titles searches were carried out for Lots 2, 310 and 311 as part of this CA. The historical titles information for Lot 32 is provided in Coffey's (2015) CA, and has been reproduced here.

3.2.1. Lot 2

A search of historical titles for Lot 2 DP 718712 was undertaken by Advanced Legal Searchers Pty Ltd. A list of past registered proprietors for the lot was obtained dating back to 1917. The results of the search are included in Appendix B and presented below in Table 3.

Table 3 – Summary of historical titles for Lot 2 DP 718712 (1917 – 2017)

Conveyance Book Details	Date	Proprietor	Inferred Land Use
Allotment 26 of the Windermere Estate and other lands – Conv book 1102 No 980	1917 - 1929	Annie Winder, (spinster) Ellie Winder , (spinster) Ethel Winder, (spinster) Hugh Wallace Winder, (farmer)	Private
Allotment 26 of the Windermere estate and other lands – Conv book 1573 No 89	1929 - 1950	Ellen Winder , (estate) Annie Winder, (estate) Hugh Wallace Winder, (farmer/executor)	Private
Allotment 26 of the Windermere estate and other lands – Conv book 2117 No 217 & 218	1950-1950	Hugh Wallace Winder, (estate) Mary Isobel Sinclair, (executrix) Ethel Florence Emily Winder, (spinster/executrix)	Private
	1950-1954	Violet Emily Moore, (married) Madge Ruth Ernest, (widow) David William Winder, (farmer) Ethel Florence Emily Winder, (spinster)	Private
Allotment 26 of Windermere Estate and other lands – Conv book 2452 No 206	1954-1958	Kate Aldridge Bruhn, (wife of minister of religion/executrix)	Private

Conveyance Book Details	Date	Proprietor	Inferred Land Use
		Violet Emily Moore, (married) Madge Ruth Ernest, (widow) Ethel Florence Winder, (estate) David William Winder, (estate)	
	1958 - 1966	Kate Aldridge Bruhn, (wife of minister of religion)	Private
Allotment 26 of Windermere Estate and other lands – Conv book 2809 No 356	1966-1969	Alexander William Benton, (farming contactor) Neta Eileen Benton, (wife)	Private
Allotment 26 of Windermere Estate and other lands – Conv book 2954 No 9	1969-1985	Edwin James Aird, (manufacturer) Ellie Aird (wife)	Private
Lot 2 DP 718712	1985-2003	Edwin James Aird, (manufacturer) Ellie Aird (wife)	Private
Lot 2 DP 718712	2003-2015	Edwin James Aird, (manufacturer)	Private
Lot 2 DP 718712	2015-2015	Edwin James Aird, Merran Power,	Private
Lot 2 DP 718712	2015-todate	Edwin James Aird Carol Ann Aird	Private

3.2.2. Lot 32

A search of historical titles for Lot 32 was undertaken by Advanced Legal Searchers Pty Ltd. A list of past registered proprietors for the lot was obtained dating back to prior to 1882. The results of the search are included in Appendix B and presented below in Table 4.

Table 4 – Summary of historical titles for Lot 32 DP 1132263 (1882 – 2015)

Conveyance Book Details	Date	Proprietor	Inferred Land Use
Part of Lots 20, 21 & 26 of the Windermere Estate and other lands – Conv Bk 1102 No 980	1882 – 1917	Charles Simpson, (executor) Thomas Winder, (estate)	Private
	1917 – 1929	Annie Winder, (spinster) Ellen Winder, (spinster) Ethel Winder, (spinster) Hugh Wallace Winder, (farmer)	Private
Part of Lots 20, 21 & 26 of the Windermere Estate and other lands – Conv Bk 2117 No 217	1929 – 1950	Ethel Florence Emily Winder, (spinster /executrix) Annie Winder, (estate) Mary Isobel Sinclair, (executrix) Ellen Winder, (estate) Hugh Wallace Winder, (estate)	Private
	1950 – 1954	Violet Emily Moore, (married woman) Madge Ruth Ernst, (widow) Mary Isobel Sinclair, (executrix) Ellen Winder, (estate) Ethel Florence Emily Winder, (spinster) David William Winder, (farmer)	Private
(Part of Lots 20, 21 & 26 of the Windermere Estate and other lands – Conv Bk 2117 No 217)	1954 – 1958	Kate Aldridge Bruhn, (wife of minister of religion / executrix) Ethel Florence Winder, (estate) David William Winder, (estate)	Private

		Violet Emily Moore, (married woman) Madge Ruth Ernst, (widow)	
	1966 – 1969	Alexander William Benton, farming contractor Neta Eileen Benton	Private
Lots 20, 21 & 26 of Windermere Estate of Portion 68 Parish Gosforth – Conv Bk 2452 No 206	1969 - 1976	Edwin James Aird, (manufacturer) Ellie Aird	Private
Lot 1 DP 556685 – CTVol 13952 Fol 48	1976 -1985	Airds Pty Limited	Commercial
Lot 3 DP 718712	1985 - 2009	Edwin James Aird,(retired) Ellie Aird Airds Pty Limited	Private and Commercial
Lot 32 DP 1132263	2009 – to date	Edwin James Aird	Private

3.2.3. Lot 310

A search of historical titles for Lot 310 DP 1034974 was undertaken by Advanced Legal Searchers Pty Ltd. A list of past registered proprietors for the lot was obtained dating back to 1915. The results of the search are included in Appendix B and presented below in Table 5.

Table 5 – Summary of historical titles for Lot 310 DP 1034974 (1915 – 2017)

Conveyance Book Details	Dates	Proprietor	Inferred Land Use
Lots 22, 24, 28 & 29 of the Windermere Estate – Area 166 Acres 1 Rood 15 Perches - CTVol 2608 Fol 169	1915-1916	Ernest Winder, (farmer)	Private
Allotment 23 of Melville Estate – Area 24 Acres 3 Roods 33 Perches and other land – Conv Bk 1167 No. 348	1916-1937	George Knife, (farmer)	Private
Allotment 27 Melville Estate – Area 49 Acres 1 Rood 16 Perches and other land – Conv Bk 1123 No. 795 Lot 23 & Lot 27 of Melville Estate – Area 24 Acres 3 Roods 33 Perches and other land – Conv Bk 1765 No's 628 & 629	1919-1936	James Morris (pensioner) William Morris (retired farmer) Thomas Morris (retired farmer)	Private

Conveyance Book Details	Dates	Proprietor	Inferred Land Use
		Ethel Eleanor Badcock (wife) George Badcock (Miner) Joseph Morris (checkweighman) William James Morris (wagon packer)	
	1919-1936	John Thomas Keys (Hotelier)	Private
	1936 – 1938	Patrick Joseph Mcmahon (Farmer)	Private
	1937-1937	George Joseph Knife, (farmer)	Private
	1937-1963	Christian Knife, (farmer)	Private
Lot 2 DP 503317 – CTVol 9452 Fol 110 Lot 23 & Part Lot 27 of Melville Estate – Area 24 Acres 3 Roods 33 Perches and other land – Conv Bk 1820 No. 974 Lot 23 & Part Lot 27 of Melville Estate – Area 24 Acres 3 Roods 33 Perches and other land – Conv Bk 3157 No. 687 Lot 23 & Part Lot 27 of Melville Estate – Area 24 Acres 3 Roods 33 Perches and other land – Conv Bk 3443 No. 42 Lot 23 & Part Lot 27 DP 976397 – Conv Bk 3501 No.311 Lot 23 & Part Lot 27 DP 976397 – Conv Bk 3584 No.592	1963-1974	Christian Knife (farmer)	Private
	1974-1981	Jones Nominees Pty Limited	Commercial
	1981-1982	Alumax of Australia Pty Limited	Commercial
	1982-1984	Abturka Pty Limited	Commercial
	1984-1985	Julie Hvirf, (wife) Richard Karl Hvirf, (fitter)	Private
Lot 3 DP 717107	1985-1988	Julie Hvirf Richard Karl Hvirf	Private
Lot 31 DP 776491	1988-2001	Julie Hvirf Richard Karl Hvirf	Private
	2001-2001	Richard Karl Hvirf	Private
Lot 310 DP 1034974	2001- to date	Richard Karl Hvirf	Private

3.2.4. Lot 311

A search of historical titles for Lot 311 DP 1135580 was undertaken by Advanced Legal Searchers Pty Ltd. A list of past registered proprietors for the lot was obtained dating back to 1883. The results of the search are included in Appendix B and presented below in Table 6.

Table 6 – Summary of historical titles for Lot 311 DP 1135580 (1883 – 2017)

Conveyance Book Details	Dates	Proprietor	Inferred Land Use
Lots 22 to 27 of Melville Estate and other Lands _ Ackn Bk 1397 No 651	1883 – 1925	Francis Heagney, (farmer/executor) Patrick Heagney, (farmer/executor) Michael Connolly, (farmer/executor) Patrick Markham, (estate)	Private
	1925 – 1925	Francis Heagney, (farmer/executor) Patrick Heagney, (estate)	Private
Lots 22 to 27 of Melville Estate and other lands – Conv Bk 1400 No 627	1925 - 1980	Francis Bertrand Heagney, (farmer)	Private
Lots 22 to 27 of Melville Estate and other lands – Conv Bk 3478 No 430	1980 – 1981	Francis Joseph Heagney, (company secretary/executor) Francis Bertrand Heagney, (estate)	Private
	1981 - 1982	Alumax of Australia Pty Limited	Commercial
Lots 25 & 30 of Melville Estate and other lands – Conv Bk 3501 No 311	1982 – 1983	Abturka Pty Limited	Commercial
Lots 25 & 30 of Melville Estate and other lands – Conv Bk 3560 No 683 &	1983 - 1987	Edwin James Aird (junior company director)	Commercial
Lot 2 DP 746278	1987 - 2001	Edwin James Aird Junior	Private
Lot 311 DP 1034974	2001- 2002	Richard Karl Hvirf Edwin James Aird Junior	Private
	2002 - 2009	Edwin James Aird Junior	Private
Lot 311 DP 1132263	2009 - 2009	Edwin James Aird Junior	Private

Conveyance Book Details	Dates	Proprietor	Inferred Land Use
Lot 311 DP 1135580	2009 – to date	Edwin James Aird Junior	Private

3.2.5. Overview

The historical titles search indicated that Lots 2, 310 and 311 were owned by private landholders until 1985. From 1985 to 2009, the three lots were partially owned by Airds Pty Ltd. From 2009, the three lots have been owned by the current landholder.

3.3. Aerial photograph review

Aerial photographs for Lots 2, 310 and 311 were purchased from the Department of Land and Property Information and assessed by a Coffey Environmental Scientist. The results of the aerial photograph review are summarised in the sections below. The aerial photographs are presented in Appendix C.

Aerial photography information for Lot 32 was provided in the Coffey (2015) CA, and has also been included in the photographs provided in Appendix C for reporting purposes.

3.3.1. Lot 2

The aerial photograph review for Lot 2 is provided below in Table 7.

Table 7 – Aerial photograph review (Lot 2 DP 718712)

Year	Site	Surrounding Land
1963	Lot 2 appears to be open grassland with very few trees scattered across the site.	To the north of Lot 2 appears to be a pond/dam followed by the New England Highway. Directly east and west are a small number of semi-rural properties and vacant grasslands. Vacant grasslands are located to the south of the site.
1975	Lot 2 appears to have been developed. Two small structures now appear on Lot 2. An unpaved access road has been constructed from the New England Hwy to the Western side of the structure. A perimeter fence is observed to surround one of the structures at the location.	An unpaved access road has been constructed to Lot 2 also allowing access to a recently constructed structure West of the site (currently Aird's of Lochinvar). Semi-rural residential properties have been added along the New England Highway, north-west of the site.
1984	Lot 2 appears unchanged since the 1975 aerial.	The pond/dam north of Lot 2 has been developed, doubling in size. The construction of a new pond/dam is visible directly east of Lot 2. The access road to the structure west of Lot 2 (Aird's of Lochinvar) appears to have been paved since the time of the last photograph.
1994	The structure on the western side of Lot 2 appears to have been developed. An extension of the original structure is evident. The remainder of Lot 2 appears similar to the 1984 aerial.	A paved carpark has been added to the north side of Airds at Lochinvar. A large rural-residential property has been added south of Lot 2. Opposite the unpaved access road from the east. The remainder of the surrounding areas remain similar to the 1984 photograph.
2004	Lot 2 appears unchanged since the 1994 aerial.	The surrounding areas remain similar to the 1994 photograph.
2016	Lot 2 appears unchanged since the 2004 aerial.	The surrounding areas remain similar to the 2004 aerial photograph.

3.3.2. Lot 32

The aerial photograph review for Lot 32 is provided below in Table 8.

Table 8 – Aerial photograph review (Lot 32 DP 1132263)

Year	Site	Surrounding Land
1958	The site appears to be vacant grassland with a very few trees scattered across the site. Two dams are present onsite.	To the north appears to be an unsealed section of the New England Highway followed by grass fields. Directly east and west are a small number of semi-rural properties and vacant grasslands. Grasslands and two ponds are located to the south.
1965	The site appears to have had crops added in two sections in the central and northern areas of the site. The remainder of the site has remained grassland.	Surrounding areas of the site remain largely unchanged from the previous photograph.
1976	An access road appears to have been constructed to provide access to Winders Road and the New England Highway for commercial and residential properties. A shed has been constructed in the central eastern portion of the site.	Residential properties appear to have been added along Winders Road The New England Highway appears to have been sealed. A number of residential developments appear to have been added to the west. The All Saints College has been constructed along with two sporting fields in the town of Lochinvar.
1987	A residential building has been added in the centre of the site along with an extension of the dirt road to the house. A swimming pool appears to have been added to the property located in the centre of the site.	A paved carpark has been added to the north side of Airds at Lochinvar. Three residential properties have been added to the north of the site. A sporting field has been added to the west. The remainder of the surrounding areas remain similar to the 1976 photograph.
1996	A small shed has been added to the property located in the centre of the site. The remainder of the site appears similar to the 1987 aerial.	Similar to 1987.
2006	The remainder of the site appears similar to the 1996 aerial.	Similar to 1996 with the exception of two extra houses constructed on Winders Lane. Extensions have been made to the existing Airds at Lochinvar building.

3.3.3. Lot 310

The aerial photograph review for Lot 310 is provided below in Table 9.

Table 9 – Aerial photograph review (Lot 310 DP 1034974)

Year	Site	Surrounding Land
1963	Lot 310 appears to be mainly open grassland with very few trees scattered across the site. There is a small residential dwelling located in the north-eastern corner of the lot with a number of outbuildings present surrounding the site. An unpaved access road is visible from Station Lane to the west.	To the north of Lot 310 appears to be a small number of semi-rural properties followed by the New England Highway. Vacant grasslands and are located directly to the east, west and south of the site.
1975	Lot 310 appears unchanged since the 1963 aerial.	A large dam has been constructed directly north of Lot 310, opposite the residential property on site. A number of semi-rural residential properties have been added along the New England Highway, to the north-east.
1984	The small dwelling located in the north eastern corner of Lot 310 is no longer visible. The structure and surrounding outbuildings have been demolished since the 1975 aerial.	The surrounding areas remain similar to the 1975 photograph.
1994	Lot 310 has been developed since the 1984 aerial. There is a rural residential property with two smaller outbuildings visible in the centre of the Lot. The addition of an unpaved access road connecting to the residential property is observed. A small pond/dam is observed west of Lot 310, adjacent Station Lane. The remainder of Lot 310 appears similar to the 1984 aerial.	The addition of a number of semi-rural residential properties is observed South west of the site, adjacent Station Lane. The remainder of the surrounding areas remain similar to the 1984 photograph.
2004	Lot 310 appears unchanged since the 1994 aerial.	The surrounding areas remain similar to the 1994 photograph.
2016	Lot 310 appears unchanged since the 2004 aerial.	The surrounding areas remain similar to the 1994 aerial.

3.3.4. Lot 311

The aerial photograph review for Lot 311 is provided below in Table 10.

Table 10 – Aerial photograph review (Lot 311 DP 1135580)

Year	Site	Surrounding Land
1963	Lot 311 appears to be mainly open grassland with very few trees scattered across the lot. There is a small dam/pond visible in the north-eastern section of the lot. There is a drainage line running in a north to south direction on the Western side of the lot.	To the north of Lot 311 appears to be a small number of semi-rural properties followed by the New England Highway. Vacant grasslands and are located directly to the east and south of Lot 311. There is a small rural property with evidence of cropping activity adjacent west of Lot 311. Further west an unpaved road (Station Lane is visible).
1975	Lot 311 appears unchanged since the 1963 aerial.	Three semi-rural properties have been constructed east of Lot 311 adjacent to Winders Lane
1984	Lot 311 appears unchanged since the 1975 aerial.	The surrounding areas remain similar to the 1975 photograph.
1994	Lot 311 appears unchanged since the 1984 aerial.	The addition of a number of semi-rural residential properties is observed directly west of Lot 311, adjacent to Station Lane. The remainder of the surrounding areas remain similar to the 1984 photograph.
2004	Lot 311 appears unchanged since the 1994 aerial.	The surrounding areas remain similar to the 1994 photograph.
2016	Lot 311 appears unchanged since the 2004 aerial.	The surrounding areas remain similar to the 1994 aerial.

3.4. Site observations

A Coffey Environmental Scientist visited the site on 20 March 2017. Site features observed during the visit are shown on Figure 2. Site photographs were taken during the visit, and are shown in Appendix D.

The site walkover focused on Lots 2, 310 and 311, though also included Lot 32 to identify changes since the Coffey (2015) CA.

The observations noted during the site walkover are summarised below:

- The majority of the site was observed to be open grassland, used for cattle grazing. Six cows were noticed in the dam on Lot 310 at the time of assessment.
- The site surface surrounding the building on Lot 310 included grassed areas, paved areas, unpaved driveway, and garden beds surrounding the property structure.
- One large residential property made of brick was observed in the centre of Lot 310 with two more structures constructed of sheet metal adjacent south of the residence. One of these structures

appeared for vehicle storage whilst the larger structure appeared to be used for farming equipment and animal storage purposes.

- A small wooden framed stockyard was observed in southern corner adjacent to the farm shed on Lot 310.
- The site surface surrounding the building on Lot 310 included grassed areas, paved areas, an unpaved driveway, and garden beds surrounding the property structure.
- Two underground tanks and two above ground water tanks were observed at the property on Lot 310. These tanks were observed to be water and septic tanks. The top of both underground tanks were exposed and visible from ground level during the time of the walkover, both tanks were made of solid concrete and both appeared to be in good condition. Two above ground metal water tanks were also noticed in the southern section of the property, both of these tanks were in an average condition, though no sign of seepage was noticed.
- The site surface surrounding Lot 2 included was mainly grassed areas with small garden beds surrounding the perimeter of the building structure. A concrete paved car port at the western entrance to the property was observed to have minor oil staining on the floor.
- A wooden framed stockyard was located towards the eastern boundary of Lot 2. The accompanying shed for the stockyard, appeared to be used as storage for scape metal and timber.
- Two above ground and one below ground storage tanks were observed surrounding the property on Lot 2. These tanks were observed to be water and septic tanks. The above ground tank was located on the eastern side of the property. This storage tank constructed from concrete appeared to be in poor to average condition at the time of the walkover, with signs of seepage visible. A second above ground storage tank was observed on the southern perimeter of the property on Lot 2. This tank is made from sheet metal and appeared to be in good condition. The underground storage tank was visible from the surface due to the top of the tank being exposed, this tank was constructed with concrete and appeared to be in good condition.
- Lot 311 appeared to be mainly open grassland with a tree line noticeable on the southern perimeter boundary
- A fill stockpile of sandy clay material, approximate volume of 15m^3 was noticed on Lot 32 adjacent west of Lot 311 boundary line. No anthropogenic material was observed on the surface of the stockpile. Judging by the lack of vegetation on the fill mound it is assumed that this has been recently placed on the lot;
- Two abandoned motor vehicles surrounded by scrap metal and wood waste observed in the south-west corner of Lot 311.
- Dried and bleached animal bones and disused petroleum 205L drums were observed along the fence line in the south eastern corner of Lot 310.
- The dam/pond observed on Lot 311 was observed to be almost empty. The dam on Lot 310 was observed to be close to full capacity with livestock in it at the time of the site visit. The water in this dam on Lot 310 appeared to be cloudy/turbid.

Lot 32 was observed to be in a similar condition to 2015, with the exception of the small soil stockpile (approximately 15m^3 in volume) noted near the boundary of Lot 311.

3.5. Interview

An interview was held with Mr Jim Aird, the current owner of the site, during the current site walkover. Mr Aird has been associated with the site since the late 1960's and is familiar with the site history.

The interview revealed the following information:

- The site has been used for residential purposes and cattle grazing. Approximately 6 cows currently exist on Lot 310;
- There has been no history of fill being imported onto site or any historical fuel storage or chemical spills;
- Mr Aird stated that there has been no widespread application of pesticides on the Lots 2, 310 and 311 since the late 1960's. Cropping of corn was historically evident throughout the 1970's on the Northern sections of Lot 310 & 311; and
- Mr Aird stated that prior to his family's acquisition of the land the late 1960's the land was known to be used for grape/vine growing purposes.

3.6. Section 149 planning certificate

The Section 149 Certificates for Lots 2, 310 and 311 were obtained from Maitland City Council. A copy of the certificate is provided in Appendix E. Table 11 (below) summarises the information contained within the certificates.

Table 11 – Information from Section 149 planning certificates

Lot Number	Zoning	Critical Habitats	Conservation Areas	Hazard Risk Restrictions	Mine Subsidence Issues	Flooding Issues	Site Contamination Notices
Lot 2 DP 718712	Zone R1 General Residential	None	None	None, on the basis the lot is in an area of no know ASS	None	None	None
Lot 310 DP 1034974	Zone R1 General Residential	None	None	None, on the basis the lot is in an area of no know ASS	None	None	None
Lot 311 DP 1135580	Zone R1 General Residential	None	None	None, on the basis the lot is in an area of no know ASS	None	None	None

3.7. NSW EPA records

A search of the NSW EPA database revealed that two properties within the Maitland City Council area are registered as having current and/or former notices. A copy of the search is provided in Appendix F. These are summarised below:

- Former gasworks, Corner of Melbourne Street & Brisbane Streets (two former notices); and
- Maitland gasworks, Charles Street, (two current notices).

These properties are not located within close proximity to the site.

3.8. Summary of site history

The information obtained from the site history review has been summarised below:

- The site (Lots 2, 32, 310 and 311) has been owned by a number of private landholders since 1882. Airds Pty Ltd also partially owned the site from 1985 to 2009. The current landholder has owned the site since 2009;
- The majority of the site has remained open grassland used predominantly for cattle grazing over the last 50 to 60 years. From a review of aerial photography, it appears that the majority of changes to the site over this period has been residential developments and the growing of crops;
- The last cropping event was carried out in 1973 on Lot 32. Corn was cropped during this event. Discussions with the current site owner indicate that a pre-emergent herbicide was used on the corn crops prior to 1973;
- The site is now used for rural residential purposes. Approximately 6 cows also exist on the site;
- A preliminary contamination investigation was carried out by BH in 2007. Concentrations of total recoverable hydrocarbons were detected above adopted investigation levels in one test pit, which was located outside the boundaries of the site being assessed by Coffey. Concentrations of contaminants were recorded below the adopted investigation levels in the test pits excavated within the current site boundaries.
- A Phase 1 & 2 Contamination Assessment was carried out by Coffey in 2015 on Lot 32 finding concentrations of some heavy metals were recorded above the adopted investigation levels in some surface water samples analysed, and elevated heavy metals in some surface soil samples analysed (though not exceeding adopted investigation levels). The low concentrations of heavy metals were indicative of the impact of past herbicide application at the site. This is evidence by the consistency observed in the concentrations of copper, chromium and zinc, both in the surface soils and the dam sediments.

3.9. Gaps in the site history

The gaps in the site history identified in the review are as follows:

- The history of cropping carried out on the site prior to the late 1960's is not fully known;
- Other activities carried out on the site prior to the late 1960's are not fully known; and
- The quantity and type of herbicide or pesticide application is unknown.

4. Investigation levels

4.1. Soil and sediment health and ecological levels

The health and ecological investigation levels for soil, presented in the following references, are generally used in NSW when selecting investigation levels for chemical contaminants in soil:

- *National Environment Protection (Assessment of Site Contamination) Measure 1999* (April 2013), NEPC 2013, Canberra; and
- Friebel and Nadebaum (2011); *CRC Care Technical Report No. 10 – Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater.*

ASC NEPM (2013) provides health and ecological investigation and screening levels for different exposure scenarios based on proposed land use. Friebel and Nadebaum (2011) provide the rationale for the selection of appropriate health screening levels (HSLs) and ecological screening levels (ESLs) for petroleum hydrocarbon compounds.

Health and ecological investigation and screening levels are applicable to the first stage (Tier 1) of site assessment and are used to assist in the iterative development of a Conceptual Site Model (CSM). They are adopted as concentrations of a contaminant above which either further appropriate investigation and/or evaluation will be required, or development of an appropriate management strategy (including remediation).

Health Investigation Levels (HILs) are applicable for assessing human health risk via relevant exposure pathways. HILs were developed for a broad range of metals and organic substances. These are generic to all soil types and apply generally to a depth of 3m below the soil surface for residential sites.

Ecological Investigation Levels (EILs) are associated with selected metals and organic compounds and have been developed for assessing risk to terrestrial ecosystems under residential, open space and commercial/industrial land use scenarios. They apply to the top 2m of soil, which corresponds to the root zone and habitation zone of many species. The EILs depend on specific soil physiochemical properties and ambient background concentrations. In the absence of ambient background concentration data, a generic Added Contaminant Limit (ACL) has been adopted for the EILs.

The HSLs have been developed for selected petroleum compounds and fractions and are applicable to assessing human health risk via inhalation and direct contact with soil and groundwater. These HSLs depend on specific soil physicochemical properties, building configurations, land use scenarios and the depth that groundwater is encountered.

The ESLs have been developed for selected petroleum compounds and fractions and are applicable for assessing risk to terrestrial ecosystems. The ESLs broadly apply to coarse and fine-grained soils under various land use scenarios and are applicable to the top 1m of soil.

As the proposed development is a residential subdivision, the relevant criteria for this site is low density residential. The soil investigation levels are presented in Table LR1.

4.2. Surface water investigation levels

The applicable guidelines for assessing water quality are:

- ANZECC (2000) Australian and New Zealand Guidelines on Fresh and Marine Water Quality; and
- National Environmental Protection Council (NEPC) National Environmental Protection (Assessment of Site Contamination) Measure (NEPM) (NEPM, 2013).

ANZECC (2000) provides surface water investigation levels for a broad range of contaminants. It is noted that ANZECC (2000) does not provide investigation levels for TRH. The investigation levels are based on:

- ANZECC (2000) trigger values to assess the risk of surface water contamination impacting aquatic ecosystems.

In order to assess which of the above criteria are applicable for the site, the potential beneficial uses of surface water must be assessed.

4.2.1. Potential beneficial uses

For assessing surface water quality, it is first necessary to assess the beneficial uses of surface water for the site and down gradient of the investigation area being assessed. Potential beneficial uses are considered to include:

- Aquatic ecosystems - discharge to surface water bodies with the nearest water body being Lochinvar Creek located about 1.5km to the north-west. Lochinvar Creek sustains a freshwater ecosystem.

Extraction of the surface water around the site for drinking water, stock watering or irrigation use is considered unlikely, due to the likely low quality of groundwater in the area for drinking purposes, and the volume of water in the ponds compared to the total site area.

Given the above, the potential beneficial use of surface water is considered to be sustaining aquatic ecosystems in Lochinvar Creek.

4.2.2. Protection of aquatic ecosystems

The trigger values for freshwater species presented in the ANZECC (2000) (and NEPM, 2013) are considered applicable for the protection of aquatic ecosystems of the receiving waters.

ANZECC (2000) advocates a site-specific approach to developing guideline trigger values based on such factors as local biological affects data, the current level of disturbance of the ecosystem, etc. The guidelines present ‘low risk guideline trigger values’ which are defined as concentrations of key performance parameters below which there is a low risk that adverse biological effects will occur. It is important to note that these are not threshold values at which an environmental problem is likely to occur if exceeded. Rather, if the trigger values are exceeded, then further action is required which may include either, further site-specific investigations to assess whether or not there is an actual problem, or the implementation of management / remedial actions.

Low risk trigger values are provided for the protection of 80-99% of species in fresh waters (presented in Table 3.4.1 of ANZECC (2000) and Table 1C of NEPM (2013)), with the trigger value depending on the health of the receiving waters.

It is considered that the fresh water trigger values are applicable for investigating chemical concentrations in surface water at the investigation area, as the potential receiving body (Lochinvar Creek) is a freshwater body.

NEPM (2013) has adopted the trigger values for the protection of 95% of aquatic ecosystems, except where contaminants are potentially bio-accumulative in which case the trigger values for protection of 99% of species are used.

ANZECC (2000) states that there is currently insufficient data to derive a high reliability trigger value for TRH.

The investigation levels for surface water are included in Table LR2.

5. Field and laboratory programme

5.1. Sampling plan rationale

The sampling plan was devised in order to assess the AECs identified on Lots 2, 310 and 311, as well as additional AECs identified on Lot 32.

It is noted that the NSW EPA (1995) Sampling Design Guidelines indicates that, for sites with an area greater than five hectares, those sites should be subdivided with each subdivided area assessed individually. Based on the site history there are few contaminating activities that have been carried out in the past and the site has predominantly used for cattle grazing with rural residential dwellings and sheds.

The use of systematic sampling in accordance with the NSW EPA (1995) Sampling Design Guidelines for site characterisation is not considered warranted. Judgemental sampling, targeting known areas of environmental concern, is considered appropriate.

Table 12 (below) summarises the sampling plan for this assessment.

Table 12 – Sampling plan

Lot	AEC	Media Sampled	Sampling Locations
Lot 2	House and garden beds	Soil	SS12 to SS16
Lot 310	House and garden beds	Soil	SS17 to SS21
	Oil-stained area	Soil	SS24 and SS25
	Pond	Surface Water	POND5-SW5
Lot 311	Drainage Lines	Sediment	SS22 and SS23
	Pond	Surface Water	POND4-SW4
Lot 32	Stockpile (additional AEC identified in 2017)	Soil	SP1
	Former cropping/cultivated areas (AEC identified in 2015)	Soil	SS1 to SS11 (sampled in Coffey's 2015 CA)
	Ponds	Surface Water	POND1-SW1 to POND3-SW3

Surface soil sampling was considered appropriate for the CA given the top down mode of contamination. Surface water sampling was considered appropriate to assess contamination in the ponds.

The sampling locations are shown on Figure 3. The sample locations from Coffey's (2015) CA are also shown on Figure 3.

5.2. Sampling methodology

Sampling for this CA was undertaken by a Coffey Environmental Scientist on 20 March 2017. Sampling consisted of the following:

- **Surface soil samples (SS12 to SS25)** – were collected using a stainless steel shovel.
- **Surface water samples (POND 4-SW4 and POND 5-SW5)** – were collected by hand from edge of the ponds.

The samples collected in the Coffey (2015) CA were also collected using the procedures outlined above.

A hand held water quality meter was used to obtain water quality readings from the two ponds, such as pH, electrical conductivity, redox potential and dissolved oxygen.A clean pair of disposable nitrile gloves was worn when collecting each sample. The sampling equipment for the surface soil sampling was decontaminated between samples by rinsing with phosphate-free detergent and potable water.

The soil samples were placed into 250mL laboratory supplied glass jars. The surface water samples were placed in appropriately-preserved laboratory supplied sample bottles.

Each sample was placed directly into an ice-chilled esky and remained chilled during transportation to the laboratory.

5.3. Laboratory analysis

The samples were analysed for potential COCs considered applicable to the AECs sampled.

The samples were dispatched to the NATA-accredited Eurofins MGT laboratory in Oakleigh, VIC, for analysis. The samples were dispatched to the laboratory under chain of custody conditions.

The surface soil and sediment samples were analysed for the following:

- Heavy Metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc) – 14 soil samples;
- Polycyclic Aromatic Hydrocarbons (PAH) – 12 soil samples;
- Organochlorine Pesticides (OCP) – 9 soil samples;
- Organophosphorus Pesticides (OPP) – 9 soil samples;
- Phenoxy Acid Herbicides – 9 soil samples;
- Total Recoverable Hydrocarbons (TRH) – 8 soil samples; and
- Benzene, Toluene, Ethylbenzene, Xylene (BTEX) – 8 soil samples.

In addition, to obtain ESLs for the assessment, one soil sample (SS20**)** was also analysed for pH, cation exchange capacity and clay content.

The two surface water samples were analysed for the following:

- Heavy Metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc);
- Organochlorine Pesticides (OCP);
- Organophosphorus Pesticides (OPP); and
- Phenoxy Acid Herbicides.

6. Quality assurance / quality control

Sampling activities were undertaken in accordance with Coffey's Standard Operating Procedures (SOPs), which are based on industry accepted practice. The assessment of field and laboratory quality assurance / quality control (QA / QC) procedures is provided below. A data validation report is presented in Appendix G.

The samples were dispatched to the NATA-accredited Eurofins MGT laboratory in Oakleigh VIC. Copies of the Chain of Custody documentation are included in Appendix H. The Chain of Custody for Coffey's (2015) CA is also included in Appendix H.

6.1. Field quality assurance / quality control

6.1.1. Holding times

Samples were analysed by the laboratory within the recommended holding times.

6.1.2. Relative percentage differences

In order to assess field QA / QC procedures, the following QC samples were collected and analysed:

- One duplicate sample (QC6) for primary sample SS20; and
- One duplicate sample (QC7) and one triplicate sample (QC8) of SS14.

Table LR3 presents the relative percentage differences (RPDs) between the primary sample and the duplicate/triplicate samples analysed. The RPDs calculated for the QA / QC sampling for the Coffey (2015) CA are also included in Tables LR2 and LR3. The data assessment for the 2015 samples was included in Coffey's (2015) CA report.

A review of the Coffey QA / QC results for this CA indicates that RPDs were within the acceptable range of 30% with the exception of some heavy metals. This is inferred to be due to either sample heterogeneity or the low concentrations of contaminants recorded in the individual samples analysed.

6.1.3. Rinsates

In order to assess field decontamination procedures, the following equipment rinsate sample was collected:

- Sample QC9.

The rinsate results are presented in Table LR5, and showed concentrations of contaminants below the detection limits. The results of the equipment rinsate sample collected in Coffey's (2015) CA are also included in Table LR5, and were addressed in Coffey's (2015) CA report.

6.2. Laboratory quality assurance / quality control

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

- Laboratory blank samples were free of contamination;
- Matrix spike recoveries were within the laboratory control limits except for lead in one sample. Eurofins MGT noted that an acceptable recovery was obtained for the laboratory control sample which indicated sample matrix interference;
- Surrogates and laboratory control samples were within the laboratories acceptable ranges; and
- Laboratory duplicate RPDs were recorded within the control limits.

The laboratory internal QA / QC assessment for Coffey's (2015) CA was included in Coffey's (2015) CA report.

6.3. Summary

Based on the assessment presented above, it is considered that the field and laboratory methods for soil are appropriate and that the data obtained is usable and considered to be representative of the concentrations at the sampling points at the time of sampling.

7. Results of investigation

7.1. Subsurface and stockpile soil conditions

The subsurface conditions observed in the surface soil samples and stockpile SP1 is summarised below in Table 13.

Table 13 – Summary of subsurface and stockpile conditions

Sample ID	Soil Description
SS12	Sandy clay, pale to dark brown, fine to coarse grained
SS13	Sandy clay, pale to dark brown, fine to medium grained
SS14	Sandy clay, pale to dark brown, fine to medium grained
SS15	Sandy clay, pale to dark brown, fine to coarse grained
SS16	Sandy clay, pale to dark brown, fine to coarse grained
SS17	Silty sand, pale brown to brown, fine grained
SS18	Silty sand, pale brown to brown, fine grained
SS19	Silty sand, brown and black, fine grained
SS20	Sandy loam, dark brown and black, fine grained
SS21	Clay, brown
SS22	Silty sand, brown and black, fine grained
SS23	Silty sand, brown and black, fine grained
SS24	Silty sand, brown and black, fine grained
SS25	Silty sand, brown and black, fine grained
SP1	Fill: Sandy, fine to medium grained, pale to dark brown

Soil samples SS1 to SS11 were observed by Coffey in 2015 to comprise residual clay, low plasticity, brown in colour.

Some minor oil staining was observed on the ground surface at the location of samples SS24 and SS25.

No odours were observed during the soil sampling. No potential asbestos containing materials (ACM) were observed during the site walkover or sampling.

7.2. PID results

The soil samples collected in the Coffey (2015) CA were screened with a Photoionisation Detector (PID) to assess the potential for volatile compounds to be present in the samples.

The PID results ranged from 0.0ppm (in a number of samples) to 0.3ppm (in sample SS9).

As the results of the Coffey (2015) CA indicated a low potential for volatile contamination to be present, PID screening was not considered to be required for the 2017 sampling event.

7.3. Surface water quality

The surface water quality results obtained from the two ponds sampled in 2017 are provided in Table 14 below.

Table 14 – Surface water quality results

Sample ID	Dissolved Oxygen (mg/L)	Electrical Conductivity (µS/cm)	pH	Redox Potential (mV)	Temperature (ºC)	Observations
POND4-SW4	4.58	237.0	8.01	-95.6	26.3	Brown, no odour
POND5-SW5	4.64	310.9	8.74	-99.5	27.1	Slightly cloudy, no odour

7.4. Laboratory results

7.4.1. Soil and sediment

The soil analytical results are summarised in Table LR1. The results from Coffey's (2015) CA are also included. The laboratory analytical reports are included in Appendix H, along with the reports from Coffey's (2015) CA.

The laboratory results indicated concentrations below the adopted criteria with the exception of:

- TRH (C16-C34), exceeding the ESL (1,300 mg/kg) in sample SS20 with a concentration of 1,400 mg/kg.

The 95% upper confidence limit (UCL) for TRH (C16-C34) was calculated. For samples with results below the laboratory limit of reporting (LOR), half the LOR was adopted. The 95% UCL was calculated to be **1,066 mg/kg**, below the adopted ESL of 1,300 mg/kg. The 95% UCL calculations are provided after Table LR1.

7.4.2. Surface water

The surface water analytical results are summarised in Table LR2. The results from Coffey's (2015) CA are also included. The laboratory analytical reports are included in Appendix H, along with the reports from Coffey's (2015) CA.

The laboratory results indicated the following:

- Concentrations of chromium and copper were recorded above the adopted investigation levels in samples POND1-SW1, POND2-SW2 and POND3-SW3;
- Concentrations of nickel and zinc were recorded above the adopted investigation levels in samples POND2-SW2 and POND3-SW3;
- Concentrations of copper, nickel and zinc were recorded above the adopted ILs in both POND4-SW4 and POND5-SW5;
- Lead was recorded above the adopted IL in POND4-SW4; and
- The remaining COCs were recorded below the adopted ILs in both POND4-SW4 and POND5-SW5.

8. Conceptual site model

Based on the findings of this CA, the CSM is discussed in the sections below. For completeness, the CSM also includes Lot 32.

8.1. Areas and chemicals of environmental concern

Table 15 (below) shows the AECs and associated COCs identified, updated based on the findings of the CA (and the Coffey 2015 CA).

Table 15 – Areas and chemicals of environmental concern

AEC	Potentially Contaminating Activity	COCs	Likelihood of Contamination*	Comments
House and garden beds of Lot 2	Presence of fill of unknown quality and potential use of pesticides and herbicides in garden beds	Heavy metals, TRH, BTEX, PAH, OCP, OPP, phenoxy acid herbicides	Low	Results of the 2017 CA indicated that soil contamination was unlikely to be present around the house or in garden beds
House and garden bed of Lot 310	Presence of fill of unknown quality and potential use of pesticides and herbicides in garden beds	Heavy metals, TRH, BTEX, PAH, OCP, OPP, phenoxy acid herbicides	Low	Results of the 2017 CA indicated that soil contamination was unlikely to be present around the house or in garden beds
Oil-stained area, south-eastern corner of Lot 310	Minor surface coil staining due to leakage/spillage of drums	Heavy metals, TRH, BTEX, PAH	Low	Results of the 2017 CA indicated that soil contamination was unlikely to be present in this area
Ponds on Lot 32, Lot 310 and Lot 311	Potentially contaminated surface water in ponds due to runoff from other areas on site	Heavy metals, OCP, OPP, phenoxy acid herbicides	Low	Results of the 2017 CA indicated that surface water contamination was unlikely to be present in the ponds The results of the Coffey (2015) CA indicated that surface water contamination was unlikely to be present in the ponds on Lot 32
Drainage lines on Lot 311	Potentially contaminated sediments due to drainage of contaminated surface water	Heavy metals, OCP, OPP, phenoxy acid herbicides	Low	Results of the 2017 CA indicated that sediment contamination was unlikely to be present in the drainage lines
Stockpile on Lot 32	Potentially contaminated soil in stockpile	Heavy metals, TRH, BTEX, PAH, OCP, OPP	Low	Results of the 2017 CA indicated that contamination was unlikely to be present in the stockpile

AEC	Potentially Contaminating Activity	COCs	Likelihood of Contamination*	Comments
Former cropping and cultivated areas of Lot 32	Former use of herbicides and pesticides	Heavy metals, OCP, OPP phenoxy herbicides	Low	The results of the Coffey (2015) CA indicated that soil contamination was unlikely to be present in these areas of Lot 32

NOTES:
** = It is important to note that this is not an assessment of the financial risk associated with the AEC in the event contamination is detected, but a qualitative assessment of the probability of contamination being detected at the potential AEC.*
Metals - Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel and Zinc; BTEX - Benzene, Toluene, Ethylbenzene and Xylenes; TRH - Total Recoverable Hydrocarbons; PAH - Polycyclic Aromatic Hydrocarbons; OCP – organochlorine pesticides; OPPs – organophosphorous pesticides

8.2. Affected media, receptors and exposure risks

Table 16 summarises the affected media, potential receptors to contamination, and potential and complete exposure pathways.

Table 16 – Summary of potentially affected media, receptors and exposure pathways

Consideration	Information	Comment
Potentially affected media on-site	Soil and surface water	Based on the results of the 2017 CA and the Coffey (2015) CA, soil and surface water at the site was unlikely to be contaminated
Potential transport mechanisms and exposure pathways	Leaching of soil contaminants to surface water Direct dermal contact with contaminated soil and/or surface water Ingestion of contaminated soil and/or surface water Surface water discharge to Lochinvar Creek	Based on the results of the 2017 CA and the Coffey (2015) CA, exposure potential to contamination was anticipated to be low
Potential receptors of contamination	***Site occupants & construction/maintenance workers*** Potential exposure via dermal contact with soil and surface water, and ingestion of soil and surface water. Contact with groundwater is considered unlikely, taking into account the anticipated depth to groundwater (>10m), and that groundwater is not currently extracted on site for beneficial use. ***Surface water*** Contaminants could leach from soils into surface water that may accumulate in the sediments and ponds on site. This is considered a potential risk as surface water is likely to drain towards the ponds. ***Groundwater*** Contaminants could leach from soils into groundwater. This is considered a lower risk due to the anticipated depth of groundwater (>10m).	Based on the results of the 2017 CA and the Coffey (2015) CA, contamination of potential receptors was anticipated to be low

Consideration	Information	Comment
	Lochinvar Creek Lochinvar Creek is the nearest surface water body (sensitive receptor) to the site, and it is considered that groundwater could discharge to Lochinvar Creek during periods of high rainfall. Given Lochinvar Creek is 1.5km distant, and the low risk of groundwater to be contaminated as a result of site conditions, the risk of site contamination reaching Lochinvar Creek is low.	

Table 17 summarises the potential and complete exposure pathways, based on the results of this CA and the Coffey (2015) CA.

Table 17 – Potential and complete exposure pathways

Receptor	Exposure Pathway	Comment
Site occupants and construction/maintenance workers	Complete	The results of this 2017 CA and the Coffey (2015) CA indicated there was a low potential for future site occupants and construction/maintenance workers to be adversely affected by contamination.
Soil	Complete	The results of this 2017 CA and the Coffey (2015) CA indicated there was a low potential for soil to be contaminated.
Groundwater	Incomplete	Groundwater was anticipated to be at depths greater than 5m bgs. Considering the top down mode of contamination and the expected clay subsoil (20-40% silts and clays), a complete exposure pathway was not expected to exist.
Surface Water and sediments	Potentially complete	The results of the 2017 CA and the Coffey (2015) indicated that surface water was unlikely to be contaminated due to runoff from the site.

9. Conclusion and recommendations

The Coffey (2015) CA and this current CA has identified a number AECs. These relate to the residential houses and garden beds on Lot 2, Lot 310 and Lot 311, the ponds on Lot 32, Lot 310 and Lot 311, former cropping/cultivated areas on Lot 32, drainage lines on Lot 311, an oil-stained area on Lot 310 and a stockpile on Lot 32.

The risk of contamination inferred at these AECs was low. The site walkover identified that the only change on Lot 32, since 2015 was a fill stockpile, approximately 15m^3 in volume, located near the boundary of Lot 311. The farm waste inside the shed was still present.

The laboratory results indicated that concentrations of contaminants were recorded below the adopted investigation levels, with the exception of TRH (C16-C34) in sample SS20 (which exceeded the adopted ESL). The 95% UCL calculations for TRH (C16-C34) showed that the arithmetic average concentration across the site was below the ESL.

Concentrations of some heavy metals were recorded above the adopted investigation levels in the surface water samples analysed. The low concentrations of heavy metals are probably indicative of the impact from past herbicide use, and/or background levels.

Based on the site history review, field observations and laboratory results, the potential for soil and/or surface water contamination to be present at the site, at levels requiring additional investigations, remediation and/or management, is considered to be low. The site (Lots 2, 32, 310 and 311) in its current configuration, is suitable for the proposed residential development provided the recommendations contained in this report and the recommendations provided in the Coffey (2015) CA are implemented

The recommendations for the site are therefore:

- The farm waste inside the shed Lot 32 is removed and the surface soils inside the shed observed. If evidence of potential contamination is identified (such as stained or odorous soils), an environmental consultant should be contacted to collect additional surface soil samples.
- A Construction Environmental Management Plan (CEMP) is implemented, prior to earthworks commencing, in order to appropriately manage the on-site and off-site disposal of soil, sediment and water.

Whilst the soils and sediments are suitable for re-use on site, should they be disposed off-site, then they would need to be classified according to the NSW EPA (2014) *Waste Classification Guidelines*. Additionally, management of the disposal and/or re-use of the pond water disposal may need to be managed during re-development.

This report must be read in conjunction with the attached sheet entitled *"Important Information about your Coffey Environmental Report"*

10. Limitations

The findings within this report are the result of discrete/specific sampling practices used in accordance with normal practices and standards. To the best of our knowledge they represent a reasonable interpretation of the general conditions of the site. Under no circumstances, however, can it be considered that these findings represent the actual state of the site at all points.

It is the nature of contaminated site investigations that the degree of variability in site conditions cannot be known completely and no sampling and analysis program can eliminate all uncertainty concerning the condition of the site. Professional judgement must be exercised in the collection and interpretation of the data.

The investigations undertaken were limited by the nature of this assessment, and are considered to provide an assessment of the likely contamination conditions at the locations sampled.

In preparing this report, current guidelines for assessment and management of contaminated land were followed. This work has been conducted in good faith in accordance with Coffey's understanding of the client's brief and general accepted practice for environmental consulting.

This report was prepared for Pulver Cooper & Blackley Pty Ltd, on behalf of E.J. Aird and R. Hvirf, with the objectives of assessing the current site conditions on Lot 32, including changes (such as new areas of concern) since Coffey's (2015) CA, identifying potentially contaminating activities that are currently being performed on Lots 2, 310 and 311, and that may have been performed on these lots in the past, assessing AEC's and COC's for the site, and developing a CSM, providing an assessment of potential soil, sediment and surface water contamination at the site, assessing the suitability of the site for the proposed residential subdivision (from a contamination perspective), and providing recommendations for remediation and/or management, as required. No warranty, expressed or implied, is made as to the information and professional advice included in this report. Anyone using this document does so at their own risk and should satisfy themselves concerning its applicability and, where necessary, should seek expert advice in relation to the particular situation.

This report does not cover hazardous building materials issues. Information within the report should not be used for geotechnical investigation purposes.

11. References

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Department of Land and Water Conservation (1995) Newcastle 1:100,000 Soil Landscape Map, Reference 9232.

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NSW Natural Resource Atlas (2017) Groundwater Bore Search – Lochinvar, accessed from http://www.nratlas.nsw.gov.au

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Soil Conservation Service of NSW (1995) *1:25,000 Greta Acid Sulfate Soils Risk Map, Edition 1.*

Topographic map for Maitland (http://imagery.maps.nsw.gov.au/), accessed on 27 March 2017.

Important information about your **Coffey** Environmental Report

Introduction

This report has been prepared by Coffey for you, as Coffey's client, in accordance with our agreed purpose, scope, schedule and budget.

The report has been prepared using accepted procedures and practices of the consulting profession at the time it was prepared, and the opinions, recommendations and conclusions set out in the report are made in accordance with generally accepted principles and practices of that profession.

The report is based on information gained from environmental conditions (including assessment of some or all of soil, groundwater, vapour and surface water) and supplemented by reported data of the local area and professional experience. Assessment has been scoped with consideration to industry standards, regulations, guidelines and your specific requirements, including budget and timing. The characterisation of site conditions is an interpretation of information collected during assessment, in accordance with industry practice.

This interpretation is not a complete description of all material on or in the vicinity of the site, due to the inherent variation in spatial and temporal patterns of contaminant presence and impact in the natural environment. Coffey may have also relied on data and other information provided by you and other qualified individuals in preparing this report. Coffey has not verified the accuracy or completeness of such data or information except as otherwise stated in the report. For these reasons the report must be regarded as interpretative, in accordance with industry standards and practice, rather than being a definitive record.

Your report has been written for a specific purpose

Your report has been developed for a specific purpose as agreed by us and applies only to the site or area investigated. Unless otherwise stated in the report, this report cannot be applied to an adjacent site or area, nor can it be used when the nature of the specific purpose changes from that which we agreed.

For each purpose, a tailored approach to the assessment of potential soil and groundwater contamination is required. In most cases, a key objective is to identify, and if possible quantify, risks that both recognised and potential contamination pose in the context of the agreed purpose. Such risks may be financial (for example, clean up costs or constraints on site use) and/or physical (for example, potential health risks to users of the site or the general public).

Limitations of the Report

The work was conducted, and the report has been prepared, in response to an agreed purpose and scope, within time and budgetary constraints, and in reliance on certain data and information made available to Coffey.

The analyses, evaluations, opinions and conclusions presented in this report are based on that purpose and scope, requirements, data or information, and they could change if such requirements or data are inaccurate or incomplete.

This report is valid as of the date of preparation. The condition of the site (including subsurface conditions) and extent or nature of contamination or other environmental hazards can change over time, as a result of either natural processes or human influence. Coffey should be kept appraised of any such events and should be consulted for further investigations if any changes are noted, particularly during construction activities where excavations often reveal subsurface conditions.

In addition, advancements in professional practice regarding contaminated land and changes in applicable statues and/or guidelines may affect the validity of this report. Consequently, the currency of conclusions and recommendations in this report should be verified if you propose to use this report more than 6 months after its date of issue.

The report does not include the evaluation or assessment of potential geotechnical engineering constraints of the site.

Interpretation of factual data

Environmental site assessments identify actual conditions only at those points where samples are taken and on the date collected. Data derived from indirect field measurements, and sometimes other reports on the site, are interpreted by geologists, engineers or scientists to provide an opinion about overall site conditions, their likely impact with respect to the report purpose and recommended actions.

Variations in soil and groundwater conditions may occur between test or sample locations and actual conditions may differ from those inferred to exist. No environmental assessment program, no matter how comprehensive, can reveal all subsurface details and anomalies. Similarly, no professional, no matter how well qualified, can reveal what is hidden by earth, rock or changed through time.

The actual interface between different materials may be far more gradual or abrupt than assumed based on the facts obtained. Nothing can be done to change the actual site conditions which exist, but steps can be taken to reduce the impact of unexpected conditions.

For this reason, parties involved with land acquisition, management and/or redevelopment should retain the services of a suitably qualified and experienced environmental consultant through the development and use of the site to identify variances, conduct additional tests if required, and recommend solutions to unexpected conditions or other unrecognised features encountered on site. Coffey would be pleased to assist with any investigation or advice in such circumstances.

Recommendations in this report

This report assumes, in accordance with industry practice, that the site conditions recognised through discrete sampling are representative of actual conditions throughout the investigation area. Recommendations are based on the resulting interpretation.

Should further data be obtained that differs from the data on which the report recommendations are based (such as through excavation or other additional assessment), then the recommendations would need to be reviewed and may need to be revised.

Report for benefit of client

Unless otherwise agreed between us, the report has been prepared for your benefit and no other party. Other parties should not rely upon the report or the accuracy or completeness of any recommendation and should make their own enquiries and obtain independent advice in relation to such matters.

Coffey assumes no responsibility and will not be liable to any other person or organisation for, or in relation to, any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report.

To avoid misuse of the information presented in your report, we recommend that Coffey be consulted before the report is provided to another party who may not be familiar with the background and the purpose of the report. In particular, an environmental disclosure report for a property vendor may not be suitable for satisfying the needs of that property's purchaser. This report should not be applied for any purpose other than that stated in the report.

Interpretation by other professionals

Costly problems can occur when other professionals develop their plans based on misinterpretations of a report. To help avoid misinterpretations, a suitably qualified and experienced environmental consultant should be retained to explain the implications of the report to other professionals referring to the report and then review plans and specifications produced to see how other professionals have incorporated the report findings.

Given Coffey prepared the report and has familiarity with the site, Coffey is well placed to provide such assistance. If another party is engaged to interpret the recommendations of the report, there is a risk that the contents of the report may be misinterpreted and Coffey disowns any responsibility for such misinterpretation.

Data should not be separated from the report

The report as a whole presents the findings of the site assessment and the report should not be copied in part or altered in any way. Logs, figures, laboratory data, drawings, etc. are customarily included in our reports and are developed by scientists or engineers based on their interpretation of field logs, field testing and laboratory evaluation of samples. This information should not under any circumstances be redrawn for inclusion in other documents or separated from the report in any way.

This report should be reproduced in full. No responsibility is accepted for use of any part of this report in any other context or for any other purpose or by third parties.

Responsibility

Environmental reporting relies on interpretation of factual information using professional judgement and opinion and has a level of uncertainty attached to it, which is much less exact than other design disciplines. This has often resulted in claims being lodged against consultants, which are unfounded. As noted earlier, the recommendations and findings set out in this report should only be regarded as interpretive and should not be taken as accurate and complete information about all environmental media at all depths and locations across the site.

Tables

Table LR1
Soil Analytical Results
PCB Lochinvar
NTLEN202989

						Field ID	POND 1 SED1	POND 2 SED2	POND 3 SED3	SP1	SS1	SS2	SS3	SS4	SS5	SS6	SS7	SS8	SS9	SS10	SS11	SS12	SS13	SS14	SS15	SS16	SS17	SS18	SS19	SS20	SS21	SS22	SS23	SS24
						Sampled Date	14/01/2015	14/01/2015	14/01/2015	20/03/2017	14/01/2015	14/01/2015	14/01/2015	14/01/2015	14/01/2015	14/01/2015	14/01/2015	14/01/2015	14/01/2015	14/01/2015	14/01/2015	20/03/2017	20/03/2017	20/03/2017	20/03/2017	20/03/2017	20/03/2017	20/03/2017	20/03/2017	20/03/2017	20/03/2017	20/03/2017	20/03/2017	20/03/2017
				HSL-A/B 0m to <1.0m[2]	EIL/ESL A/B[3]	NEPM 2013 HILs Residential A Soil[1]																												
Analyte		**Units**	**EQL**																															
Heavy Metal	Arsenic	mg/kg	2		100*	100	5.2	2.7	2.9	2.5	3.8	3.5	3.1	3.4	2.2	3	3	2.8	2.3	2.5	2.2	2	3.2	<2	<2	6	3.1	2.5	<2	4.9	2.4	2.7	11	<2
	Cadmium	mg/kg	0.4			20	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
	Chromium	mg/kg	5		400*	100	64	90	78	110	82	66	78	77	87	77	91	97	95	110	77	96	44	93	43	16	39	29	17	19	190	120	80	78
	Copper	mg/kg	5		560*	6000	26	41	34	82	32	53	28	23	38	41	38	44	39	36	27	45	28	42	22	11	23	24	6.7	16	63	27	20	20
	Lead	mg/kg	5		470*	300	<5	<5	<5	6.9	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	19	21	23	10	14	8.9	6.8	7	<5	28	13	16	12
	Mercury	mg/kg	0.1			40	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1
	Nickel	mg/kg	5		420*	400	57	53	120	98	54	36	50	29	46	43	50	53	62	68	36	50	40	63	28	18	37	28	13	15	49	52	36	24
	Zinc	mg/kg	5		1200*	7400	39	35	24	65	40	33	39	34	31	29	39	36	36	48	49	120	120	460	87	93	49	35	48	82	84	27	37	23
OCP	4,4-DDE	mg/kg	0.05				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	-	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	-
	a-BHC	mg/kg	0.05				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	-	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	-
	Aldrin	mg/kg	0.05				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	-	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	-
	b-BHC	mg/kg	0.05				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	-	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	-
	Chlordane	mg/kg	0.1			50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	-
	d-BHC	mg/kg	0.05				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	-	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	-
	DDD	mg/kg	0.05				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	-	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	-
	DDT	mg/kg	0.05		180		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	-	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	-
	Dieldrin	mg/kg	0.05				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	0.31	-	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	-
	Endosulfan I	mg/kg	0.05				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	-	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	-
	Endosulfan II	mg/kg	0.05				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	-	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	-
	Endosulfan sulphate	mg/kg	0.05				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	-	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	-
	Endrin	mg/kg	0.05			10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	-	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	-
	Endrin aldehyde	mg/kg	0.05				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	-	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	-
	Endrin ketone	mg/kg	0.05				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	-	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	-
	g-BHC (Lindane)	mg/kg	0.05				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	-	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	-
	Heptachlor	mg/kg	0.05			6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	-	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	-
	Heptachlor epoxide	mg/kg	0.05				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	-	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	-
	Hexachlorobenzene	mg/kg	0.05			10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	-	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	-
	Methoxychlor	mg/kg	0.05			300	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	-	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	-
	Toxaphene	mg/kg	1			20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<1	<1	-	-	<1	<1	<1	<1	-
OPP	Azinophos methyl	mg/kg	0.2				<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Bolstar (Sulprofos)	mg/kg	0.2				<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Chlorfenvinphos	mg/kg	0.2				-	-	-	<0.2	-	-	-	-	-	-	-	-	-	-	-	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Chlorpyrifos	mg/kg	0.2			160	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	-	3	<0.2	<0.2	<0.2	-
	Chlorpyrifos-methyl	mg/kg	0.2				-	-	-	<0.2	-	-	-	-	-	-	-	-	-	-	-	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Coumaphos	mg/kg	2				-	-	-	<2	-	-	-	-	-	-	-	-	-	-	-	<2	-	<2	-	<2	<2	-	-	<2	<2	<2	<2	-
	Demeton-O	mg/kg	0.2				<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Demeton-S	mg/kg	0.2				-	-	-	<0.2	-	-	-	-	-	-	-	-	-	-	-	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Diazinon	mg/kg	0.2				<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Dichlorvos	mg/kg	0.2				<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Dimethoate	mg/kg	0.2				-	-	-	<0.2	-	-	-	-	-	-	-	-	-	-	-	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Disulfoton	mg/kg	0.2				<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	EPN	mg/kg	0.2				-	-	-	<0.2	-	-	-	-	-	-	-	-	-	-	-	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Ethion	mg/kg	0.2				<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Ethoprop	mg/kg	0.2				<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Fenitrothion	mg/kg	0.2				<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Fensulfothion	mg/kg	0.2				<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Fenthion	mg/kg	0.2				<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Malathion	mg/kg	0.2				-	-	-	<0.2	-	-	-	-	-	-	-	-	-	-	-	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Merphos	mg/kg	0.2				<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Methyl parathion	mg/kg	0.2				<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Mevinphos (Phosdrin)	mg/kg	0.2				<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Monocrotophos	mg/kg	2				-	-	-	<2	-	-	-	-	-	-	-	-	-	-	-	<2	-	<2	-	<2	<2	-	-	<2	<2	<2	<2	-
	Naled (Dibrom)	mg/kg	0.2				<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Omethoate	mg/kg	2				-	-	-	<2	-	-	-	-	-	-	-	-	-	-	-	<2	-	<2	-	<2	<2	-	-	<2	<2	<2	<2	-
	Parathion	mg/kg	0.2				-	-	-	<0.2	-	-	-	-	-	-	-	-	-	-	-	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Phorate	mg/kg	0.2				<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Pirimiphos-methyl	mg/kg	0.2				-	-	-	<0.2	-	-	-	-	-	-	-	-	-	-	-	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Pyrazophos	mg/kg	0.2				-	-	-	<0.2	-	-	-	-	-	-	-	-	-	-	-	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Ronnel	mg/kg	0.2				<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Terbufos	mg/kg	0.2				-	-	-	<0.2	-	-	-	-	-	-	-	-	-	-	-	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Trichloronate	mg/kg	0.2				<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Tetrachlorvinphos	mg/kg	0.2				-	-	-	<0.2	-	-	-	-	-	-	-	-	-	-	-	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
	Tokuthion	mg/kg	0.2				<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	-
Organic	2,4,5-Trichlorophenoxy acetic acid	mg/kg	0.5			600	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	-
	2,4,5-TP (Silvex)	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	-
	2,4-Dichlorophenoxy acetic acid	mg/kg	0.5			900	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	-
	2,4-Dichlorprop	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	-
	4-(2,4-Dichlorophenoxy) butyric acid (2,4-DB)	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	-
	4,6-Dinitro-2-methylphenol	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	-
	Actril (Ioxynil)	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	-
	Dicamba	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	-
	Dinoseb	mg/kg	0.5				-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	-
	2-Methyl-4-chlorophenoxy acetic acid	mg/kg	0.5			600	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	-
	2-Methyl-4-Chlorophenoxy butanoic acid	mg/kg	0.5			600	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	-
	Mecoprop	mg/kg	0.5			600	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	-
TPH	Naphthalene	mg/kg	0.5	5	170		-	-	-	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	-	-	<0.5	<0.5	-	-	<0.5
	F2-NAPHTHALENE	mg/kg	50	280			-	-	-	<50	<50	<50	-	-	<50	<50	<50	-	<50	<50	<50	<50	-	<50	-	<50	<50	-	-	<50	<50	-	-	<50
	C6 - C9	mg/kg	20				-	-	-	<20	<20	<20	-	-	<20	<20	<40	-	<20	<20	<20	<20	-	<20	-	<20	<20	-	-	<20	<20	-	-	<20
	C6-C10 less BTEX (F1)	mg/kg	20	50			-	-	-	<20	<20	<20	-	-	<20	<20	<40	-	<20	<20	<20	<20	-	<20	-	<20	<20	-	-	<20	<20	-	-	<20
	C10-C16	mg/kg	50		120		-	-	-	<50	<50	<50	-	-	<50	<50	<50	-	<50	<50	<50	<50	-	<50	-	<50	<50	-	-	<50	<50	-	-	<50
	C16-C34	mg/kg	100		1300		-	-	-	<100	<100	<100	-	-	<100	<100	180	-	<100	220	<100	<100	-	<100	-	590	170	-	-	1400	<100	-	-	<100
	C34-C40	mg/kg	100		5600		-	-	-	<100	<100	<100	-	-	<100	<100	130	-	<100	110	<100	<100	-	<100	-	220	110	-	-	210	<100	-	-	<100
	C6 - C10	mg/kg	20		180		-	-	-	<20	<20	<20	-	-	<20	<20	<40	-	<20	<20	<20	<20	-	<20	-	<20	<20	-	-	<20	<20	-	-	<20
	C10 - C14	mg/kg	20				-	-	-	<20	<20	<20	-	-	<20	<20	<20	-	<20	<20	<20	<20	-	<20	-	<20	<20	-	-	28	<20	-	-	<20
	C15 - C28	mg/kg	50				-	-	-	<50	<50	<50	-	-	<50	<50	68	-	<50	110	<50	<50	-	<50	-	320	51	-	-	1200	<50	-	-	<50
	C29 - C36	mg/kg	50				-	-	-	<50	<50	<50	-	-	<50	<50	170	-	81	160	54	<50	-	<50	-	340	130	-	-	440	<50	-	-	<50
	C10 - C36 (Sum of total)	mg/kg	50				-	-	-	<50	<50	<50	-	-	<50	<50	240	-	81	270	54	<50	-	<50	-	660	181	-	-	1668	<50	-	-	<50
PAH	Acenaphthene	mg/kg	0.5				-	-	-	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5
	Acenaphthylene	mg/kg	0.5				-	-	-	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5
	Anthracene	mg/kg	0.5				-	-	-	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5
	Benzo(a)anthracene	mg/kg	0.5				-	-	-	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5
	Benzo(a)pyrene	mg/kg	0.5		0.7		-	-	-	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5
	Benzo(a)pyrene TEQ (lower bound) *	MG/KG	0.5				-	-	-	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5
	Benzo(a)pyrene TEQ (medium bound) *	MG/KG	0.5				-	-	-	0.6	0.6	0.6	-	-	0.6	0.6	0.6	-	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	-	-	0.6
	Benzo(a)pyrene TEQ (upper bound) *	MG/KG	0.5				-	-	-	1.2	1.2	1.2	-	-	1.2	1.2	1.2	-	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	-	-	1.2
	Benzo(g,h,i)perylene	mg/kg	0.5				-	-	-	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5
	Benzo(k)fluoranthene	mg/kg	0.5				-	-	-	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5
	Chrysene	mg/kg	0.5				-	-	-	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5
	Benzo[b+j]fluoranthene	mg/kg	0.5				-	-	-	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5
	Dibenz(a,h)anthracene	mg/kg	0.5				-	-	-	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5
	Fluoranthene	mg/kg	0.5				-	-	-	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5
	Fluorene	mg/kg	0.5				-	-	-	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.5				-	-	-	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5
	Naphthalene	mg/kg	0.5	5	10		-	-	-	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5
	Phenanthrene	mg/kg	0.5				-	-	-	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5
	Pyrene	mg/kg	0.5				-	-	-	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5
	Total PAHs	mg/kg	0.5			300	-	-	-	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5
BTEX	Benzene	mg/kg	0.1	0.7	65		-	-	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	<0.2	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	-	<0.1	<0.1	-	-	<0.1
	Ethylbenzene	mg/kg	0.1		125		-	-	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	<0.2	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	-	<0.1	<0.1	-	-	<0.1
	Toluene	mg/kg	0.1	480	105		-	-	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	<0.2	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	-	<0.1	<0.1	-	-	<0.1
	Xylene (m & p)	mg/kg	0.2				-	-	-	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.4	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	-	<0.2	<0.2	-	-	<0.2
	Xylene (o)	mg/kg	0.1				-	-	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	<0.2	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	-	<0.1	<0.1	-	-	<0.1
	Xylene Total	mg/kg	0.3	110	45		-	-	-	<0.3	<0.3	<0.3	-	-	<0.3	<0.3	<0.6	-	<0.3	<0.3	<0.3	<0.3	-	<0.3	-	<0.3	<0.3	-	-	<0.3	<0.3	-	-	<0.3

Notes:

Result	Concentration exceeds adopted health screening level, vapour intrusion (Residential) - clay 0-1m
Result	Concentration exceeds adopted EIL and ESL criteria
Result	Concentration exceeds adopted human health critieria

- Not Analysed

[1] NEPC (2013) National Environmental Protection (Assessment of Site Contamination) Measure (NEPM 2013) - Table 1A(1): Health Investigation Levels

[2] NEPC (2013) Soil Health Screening Levels for Vapour Intrusion, Residential, Sand 0m to <1m

[3] NEPC (2013) National Environmental Protection (Assessment of Site Contamination) Measure (NEPM 2013) - Ecological Investigation and Screening Levels

* EIL determined using pH of 7.8 and CEC of 47meq/100ml

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

C0

General Statistics

Number of Valid Observations	16	Number of Distinct Observations	6

Raw Statistics		Log-transformed Statistics	
Minimum	50	Minimum of Log Data	3.912
Maximum	1400	Maximum of Log Data	7.244
Mean	194.4	Mean of log Data	4.524
Median	50	SD of log Data	1.05
SD	350.3		
Coefficient of Variation	1.802		
Skewness	3.157		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.486	Shapiro Wilk Test Statistic	0.657
Shapiro Wilk Critical Value	0.887	Shapiro Wilk Critical Value	0.887
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
95% Student's-t UCL	347.9	95% H-UCL	340.2
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	345
95% Adjusted-CLT UCL	412.3	97.5% Chebyshev (MVUE) UCL	428.4
95% Modified-t UCL	359.4	99% Chebyshev (MVUE) UCL	592.2

Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.688	Data do not follow a Discernable Distribution (0.05)	
Theta Star	282.4		
nu star	22.03		
Approximate Chi Square Value (.05)	12.36	**Nonparametric Statistics**	
Adjusted Level of Significance	0.0335	95% CLT UCL	338.4
Adjusted Chi Square Value	11.54	95% Jackknife UCL	347.9
		95% Standard Bootstrap UCL	330.6
Anderson-Darling Test Statistic	2.826	95% Bootstrap-t UCL	937.2
Anderson-Darling 5% Critical Value	0.772	95% Hall's Bootstrap UCL	928.6
Kolmogorov-Smirnov Test Statistic	0.409	95% Percentile Bootstrap UCL	345.6
Kolmogorov-Smirnov 5% Critical Value	0.223	95% BCA Bootstrap UCL	435
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	576.1
		97.5% Chebyshev(Mean, Sd) UCL	741.3
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	1066
95% Approximate Gamma UCL	346.4		
95% Adjusted Gamma UCL	371		
Potential UCL to Use		Use 99% Chebyshev (Mean, Sd) UCL	1066

Table LR2
Surface Water Results
PCB Lochinvar
NTLEN202989

				Field ID	POND 1 SW1	POND 2 SW2	POND 3 SW3	POND 4-SW4	POND 5-SW5
				Sampled Date	14/01/2015	14/01/2015	14/01/2015	20/03/2017	20/03/2017
Analyte		Units	EQL	ANZECC 2000 Freshwater 95%					
Heavy Met	Arsenic	mg/L	0.001		0.001	<0.001	0.001	0.005	<0.001
	Cadmium	mg/L	0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	Chromium	mg/L	0.001		0.005	0.033	0.11	0.084	0.007
	Copper	mg/L	0.001	0.0014	0.005	0.023	0.019	0.034	0.005
	Lead	mg/L	0.001	0.0034	<0.001	0.003	0.002	0.018	<0.001
	Mercury	mg/L	0.0001	0.0006	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
	Nickel	mg/L	0.001	0.011	0.008	0.049	0.026	0.059	0.048
	Zinc	mg/L	0.001	0.008	0.003	0.021	0.011	0.079	0.02
Inorganic	Electrical conductivity *(lab)	uS/cm	1		320	290	240	-	-
	pH (Lab)	pH_Units	0.1		8.4	6.5	8	-	-
OCP	4,4-DDE	µg/L	0.1		<0.1	<0.1	<0.1	<0.1	<0.1
	a-BHC	µg/L	0.1		<0.1	<0.1	<0.1	<0.1	<0.1
	Aldrin	µg/L	0.1		<0.1	<0.1	<0.1	<0.1	<0.1
	b-BHC	µg/L	0.1		<0.1	<0.1	<0.1	<0.1	<0.1
	Chlordane	µg/L	1	0.08	<1	<1	<1	<1	<1
	d-BHC	µg/L	0.1		<0.1	<0.1	<0.1	<0.1	<0.1
	DDD	µg/L	0.1		<0.1	<0.1	<0.1	<0.1	<0.1
	DDT	µg/L	0.1	0.01	<0.1	<0.1	<0.1	<0.1	<0.1
	Dieldrin	µg/L	0.1		<0.1	<0.1	<0.1	<0.1	<0.1
	Endosulfan I	µg/L	0.1		<0.1	<0.1	<0.1	<0.1	<0.1
	Endosulfan II	µg/L	0.1		<0.1	<0.1	<0.1	<0.1	<0.1
	Endosulfan sulphate	µg/L	0.1		<0.1	<0.1	<0.1	<0.1	<0.1
	Endrin	µg/L	0.1	0.02	<0.1	<0.1	<0.1	<0.1	<0.1
	Endrin aldehyde	µg/L	0.1		<0.1	<0.1	<0.1	<0.1	<0.1
	Endrin ketone	µg/L	0.1		<0.1	<0.1	<0.1	<0.1	<0.1
	g-BHC (Lindane)	µg/L	0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1
	Heptachlor	µg/L	0.1	0.09	<0.1	<0.1	<0.1	<0.1	<0.1
	Heptachlor epoxide	µg/L	0.1		<0.1	<0.1	<0.1	<0.1	<0.1
	Hexachlorobenzene	µg/L	0.1		<0.1	<0.1	<0.1	<0.1	<0.1
	Methoxychlor	µg/L	0.1		<0.1	<0.1	<0.1	<0.1	<0.1
	Toxaphene	mg/L	0.01	0.0002	<0.01	<0.01	<0.01	<0.01	<0.01
OPP	Azinophos methyl	µg/L	2	0.02	<2	<2	<2	<2	<2
	Bolstar (Sulprofos)	µg/L	2		<2	<2	<2	<2	<2
	Chlorfenvinphos	µg/L	2		-	-	-	<2	<2
	Chlorpyrifos	µg/L	2	0.01	<2	<2	<2	<20	<20
	Chlorpyrifos-methyl	mg/L	0.002		-	-	-	<0.002	<0.002
	Coumaphos	µg/L	20		-	-	-	<20	<20
	Demeton-O	µg/L	2		<2	<2	<2	<2	<2
	Demeton-S	µg/L	20		-	-	-	<20	<20
	Diazinon	µg/L	2	0.01	<2	<2	<2	<2	<2
	Dichlorvos	µg/L	2		<2	<2	<2	<2	<2
	Dimethoate	µg/L	2	0.15	-	-	-	<2	<2
	Disulfoton	µg/L	2		<2	<2	<2	<2	<2
	EPN	µg/L	2		-	-	-	<2	<2
	Ethion	µg/L	2		<2	<2	<2	<2	<2
	Ethoprop	µg/L	2		<2	<2	<2	<2	<2
	Fenitrothion	µg/L	2	0.2	<2	<2	<2	<2	<2
	Fensulfothion	µg/L	2		<2	<2	<2	<2	<2
	Fenthion	µg/L	2		<2	<2	<2	<2	<2
	Malathion	µg/L	2	0.05	-	-	-	<2	<2
	Merphos	mg/L	0.002		<0.002	<0.002	<0.002	<0.002	<0.002
	Methyl parathion	µg/L	2		<2	<2	<2	<2	<2
	Mevinphos (Phosdrin)	µg/L	2		<2	<2	<2	<2	<2
	Monocrotophos	µg/L	2		-	-	-	<2	<2
	Naled (Dibrom)	µg/L	2		<2	<2	<2	<2	<2
	Omethoate	µg/L	2		-	-	-	<2	<2
	Parathion	µg/L	2	0.004	-	-	-	<2	<2
	Phorate	µg/L	2		<2	<2	<2	<2	<2
	Pirimiphos-methyl	mg/L	0.02		-	-	-	<0.02	<0.02
	Pyrazophos	µg/L	2		-	-	-	<2	<2
	Ronnel	µg/L	2		<2	<2	<2	<2	<2
	Terbufos	µg/L	2		-	-	-	<2	<2
	Trichloronate	µg/L	2		<2	<2	<2	<2	<2
	Tetrachlorvinphos	mg/L	0.002		-	-	-	<0.002	<0.002
	Tokuthion	µg/L	2		<2	<2	<2	<2	<2
Organic	2,4,5-Trichlorophenoxy acetic acid	mg/L	0.001	0.036	-	-	-	<0.02	<0.001
	2,4,5-TP (Silvex)	mg/L	0.001		-	-	-	<0.02	<0.001
	2,4-Dichlorophenoxy acetic acid	mg/L	0.001	0.28	-	-	-	<0.02	<0.001
	2,4-Dichlorprop	mg/L	0.001		-	-	-	<0.02	<0.001
	4-(2,4-Dichlorophenoxy) butyric acid (2	µg/L	1		-	-	-	<20	<1
	4,6-Dinitro-2-methylphenol	µg/L	1		-	-	-	<20	<1
	Actril (loxynil)	mg/L	0.001		-	-	-	<0.02	<0.001
	Dicamba	µg/L	1		-	-	-	<20	<1
	Dinoseb	µg/L	1		-	-	-	<20	<1
	2-Methyl-4-chlorophenoxy acetic acid	µg/L	1		-	-	-	<20	<1
	2-Methyl-4-Chlorophenoxy butanoic ac	µg/L	1		-	-	-	<20	<1
	Mecoprop	µg/L	1		-	-	-	<20	<1

Notes:

Results Exceeds ANZECC 2000 Fresh water 95% guidelines

- Not Analysed

Table LR3
Soil QA/QC Results
PCB Lochinvar
NTLEN202989

SDG			3458	3458		3458	3459		23-Mar-17	23-Mar-17		23-Mar-17	23-Mar-17		23-Mar-17	4573	
Field ID			SS1	QC2	**RPD**	SS1	QC 3	**RPD**	SS20	QC6	**RPD**	SS14	QC7	**RPD**	SS14	QC8	**RPD**
Sampled Date			14/01/2015	14/01/2015		14/01/2015	14/01/2015		20/03/2017	20/03/2017		20/03/2017	20/03/2017		20/03/2017	20/03/2017	
Analyte		**Units**	**EQL**														
BTEX	Benzene	mg/kg	0.1 (Primary): 0.2 (Interlab)	<0.1	<0.1	0	<0.1	<0.2	0	-	-	-	<0.1	<0.1	0	<0.1	<0.2	0
	Ethylbenzene	mg/kg	0.1 (Primary): 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.5	0	-	-	-	<0.1	<0.1	0	<0.1	<0.5	0
	Toluene	mg/kg	0.1 (Primary): 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.5	0	-	-	-	<0.1	<0.1	0	<0.1	<0.5	0
	Xylene (m & p)	mg/kg	0.2 (Primary): 0.5 (Interlab)	<0.2	<0.2	0	<0.2	<0.5	0	-	-	-	<0.2	<0.2	0	<0.2	<0.5	0
	Xylene (o)	mg/kg	0.1 (Primary): 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.5	0	-	-	-	<0.1	<0.1	0	<0.1	<0.5	0
	Xylene Total	mg/kg	0.3 (Primary): 0.5 (Interlab)	<0.3	<0.3	0	<0.3	<0.5	0	-	-	-	<0.3	<0.3	0	<0.3	<0.5	0
Organic	2,4,5-Trichlorophenoxy acetic acid	mg/kg	0.5 (Primary): 0.02 (Interlab)	-	-	-	-	-	-	-	-	-	<0.5	<0.5	0	<0.5	<0.02	0
	2,4,5-TP (Silvex)	mg/kg	0.5 (Primary): 0.02 (Interlab)	-	-	-	-	-	-	-	-	-	<0.5	<0.5	0	<0.5	<0.02	0
	2,4-Dichlorophenoxy acetic acid	mg/kg	0.5 (Primary): 0.02 (Interlab)	-	-	-	-	-	-	-	-	-	<0.5	<0.5	0	<0.5	<0.02	0
	2,4-Dichlorprop	mg/kg	0.5 (Primary): 0.02 (Interlab)	-	-	-	-	-	-	-	-	-	<0.5	<0.5	0	<0.5	<0.02	0
	4-(2,4-Dichlorophenoxy) butyric acid (2,4-DB)	mg/kg	0.5	-	-	-	-	-	-	-	-	-	<0.5	<0.5	0	<0.5	-	
	Actril (loxynil)	mg/kg	0.5	-	-	-	-	-	-	-	-	-	<0.5	<0.5	0	<0.5	-	
	Dicamba	mg/kg	0.5 (Primary): 0.02 (Interlab)	-	-	-	-	-	-	-	-	-	<0.5	<0.5	0	<0.5	<0.02	0
	4,6-Dinitro-2-methylphenol	mg/kg	0.5	-	-	-	-	-	-	-	-	-	<0.5	<0.5	0	<0.5	-	
	Dinoseb	mg/kg	0.5	-	-	-	-	-	-	-	-	-	<0.5	<0.5	0	<0.5	-	
	2-Methyl-4-chlorophenoxy acetic acid	mg/kg	0.5 (Primary): 0.02 (Interlab)	-	-	-	-	-	-	-	-	-	<0.5	<0.5	0	<0.5	<0.02	0
	2-Methyl-4-Chlorophenoxy butanoic acid	mg/kg	0.5 (Primary): 0.02 (Interlab)	-	-	-	-	-	-	-	-	-	<0.5	<0.5	0	<0.5	<0.02	0
	Mecoprop	mg/kg	0.5 (Primary): 0.02 (Interlab)	-	-	-	-	-	-	-	-	-	<0.5	<0.5	0	<0.5	<0.02	0
Heavy Metal	Arsenic	mg/kg	2 (Primary): 5 (Interlab)	3.8	3.2	17	3.8	<5.0	0	4.9	5.1	4	<2.0	<2.0	0	<2.0	<5.0	0
	Cadmium	mg/kg	0.4 (Primary): 1 (Interlab)	<0.4	<0.4	0	<0.4	<1.0	0	<0.4	<0.4	0	<0.4	<0.4	0	<0.4	<1.0	0
	Chromium	mg/kg	5 (Primary): 2 (Interlab)	82.0	79.0	4	82.0	96.0	16	19.0	25.0	27	93.0	99.0	6	93.0	72.0	25
	Copper	mg/kg	5	32.0	32.0	0	32.0	34.0	6	16.0	17.0	6	42.0	43.0	2	42.0	29.0	37
	Lead	mg/kg	5	<5.0	<5.0	0	<5.0	6.0	18	<5.0	<5.0	0	23.0	18.0	24	23.0	11.0	71
	Mercury	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
	Nickel	mg/kg	5 (Primary): 2 (Interlab)	54.0	51.0	6	54.0	70.0	26	15.0	20.0	29	63.0	63.0	0	**63.0**	**43.0**	**38**
	Zinc	mg/kg	5	40.0	39.0	3	40.0	53.0	28	82.0	99.0	19	460.0	380.0	19	**460.0**	**286.0**	**47**
OCP	4,4-DDE	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	-	-	-	<0.05	<0.05	0	<0.05	<0.05	0
	a-BHC	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	-	-	-	<0.05	<0.05	0	<0.05	<0.05	0
	Aldrin	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	-	-	-	<0.05	<0.05	0	<0.05	<0.05	0
	b-BHC	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	-	-	-	<0.05	<0.05	0	<0.05	<0.05	0
	Chlordane	mg/kg	0.1 (Primary): 0.05 (Interlab)	-	-	-	-	-	-	-	-	-	<0.1	<0.1	0	<0.1	<0.05	0
	Chlordane	mg/kg	0.1	<0.1	<0.1	0	<0.1	-	-	-	-	-	-	-	-	-	-	-
	d-BHC	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	-	-	-	<0.05	<0.05	0	<0.05	<0.05	0
	DDD	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	-	-	-	<0.05	<0.05	0	<0.05	<0.05	0
	DDT	mg/kg	0.05 (Primary): 0.2 (Interlab)	-	-	-	-	-	-	-	-	-	<0.05	<0.05	0	<0.05	<0.2	0
	DDT	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	-	-	-	-	-	-	-	-	-
	Dieldrin	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	-	-	-	0.31	0.15	70	0.31	0.16	64
	Endosulfan I	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	-	-	-	<0.05	<0.05	0	<0.05	<0.05	0
	Endosulfan II	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	-	-	-	<0.05	<0.05	0	<0.05	<0.05	0
	Endosulfan sulphate	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	-	-	-	<0.05	<0.05	0	<0.05	<0.05	0
	Endrin	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	-	-	-	<0.05	<0.05	0	<0.05	<0.05	0
	Endrin aldehyde	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	-	-	-	<0.05	<0.05	0	<0.05	<0.05	0
	Endrin ketone	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	-	-	-	<0.05	<0.05	0	<0.05	<0.05	0
	g-BHC (Lindane)	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	-	-	-	<0.05	<0.05	0	<0.05	<0.05	0
	Heptachlor	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	-	-	-	<0.05	<0.05	0	<0.05	<0.05	0
	Heptachlor epoxide	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	-	-	-	<0.05	<0.05	0	<0.05	<0.05	0
	Hexachlorobenzene	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	-	-	-	<0.05	<0.05	0	<0.05	<0.05	0
	Methoxychlor	mg/kg	0.05	<0.05	<0.05	0	<0.05	-	-	-	-	-	-	-	-	-	-	-
	Methoxychlor	mg/kg	0.05 (Primary): 0.2 (Interlab)	-	-	-	-	-	-	-	-	-	<0.05	<0.05	0	<0.05	<0.2	0
	Toxaphene	mg/kg	1	<1.0	<1.0	0	<1.0	-	-	-	-	-	<1.0	<1.0	0	<1.0		
OPP	Azinophos methyl	mg/kg	0.2 (Primary): 0.05 (Interlab)	-	-	-	-	-	-	-	-	-	<0.2	<0.2	0	<0.2	<0.05	0
	Azinophos methyl	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	-	-	-	-	-	-	-	-	-
	Bolstar (Sulprofos)	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	-	-	-	<0.2	<0.2	0	<0.2		
	Chlorfenvinphos	mg/kg	0.2 (Primary): 0.05 (Interlab)	-	-	-	-	-	-	-	-	-	<0.2	<0.2	0	<0.2	<0.05	0
	Chlorpyrifos	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	-	-	-	-	-	-	-	-	-
	Chlorpyrifos	mg/kg	0.2 (Primary): 0.05 (Interlab)	-	-	-	-	-	-	-	-	-	<0.2	<0.2	0	<0.2	<0.05	0
	Chlorpyrifos-methyl	mg/kg	0.2 (Primary): 0.05 (Interlab)	-	-	-	-	-	-	-	-	-	<0.2	<0.2	0	<0.2	<0.05	0
	Coumaphos	mg/kg	2	-	-	-	-	-	-	-	-	-	<2.0	<2.0	0	<2.0	-	-
	Demeton-O	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	-	-	-	<0.2	<0.2	0	<0.2	-	-
	Demeton-S	mg/kg	0.2	-	-	-	-	-	-	-	-	-	<0.2	<0.2	0	<0.2	-	-
	Diazinon	mg/kg	0.2 (Primary): 0.05 (Interlab)	-	-	-	-	-	-	-	-	-	<0.2	<0.2	0	<0.2	<0.05	0
	Diazinon	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	-	-	-	-	-	-	-	-	-
	Dichlorvos	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	-	-	-	-	-	-	-	-	-
	Dichlorvos	mg/kg	0.2 (Primary): 0.05 (Interlab)	-	-	-	-	-	-	-	-	-	<0.2	<0.2	0	<0.2	<0.05	0
	Dimethoate	mg/kg	0.2 (Primary): 0.05 (Interlab)	-	-	-	-	-	-	-	-	-	<0.2	<0.2	0	<0.2	<0.05	0
	Disulfoton	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	-	-	-	<0.2	<0.2	0	<0.2	-	-
	EPN	mg/kg	0.2	-	-	-	-	-	-	-	-	-	<0.2	<0.2	0	<0.2	-	-
	Ethion	mg/kg	0.2 (Primary): 0.05 (Interlab)	-	-	-	-	-	-	-	-	-	<0.2	<0.2	0	<0.2	<0.05	0
	Ethion	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	-	-	-	-	-	-	-	-	-
	Ethoprop	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	-	-	-	<0.2	<0.2	0	<0.2	-	-
	Fenitrothion	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	-	-	-	<0.2	<0.2	0	<0.2	-	-
	Fensulfothion	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	-	-	-	<0.2	<0.2	0	<0.2	-	-
	Fenthion	mg/kg	0.2 (Primary): 0.05 (Interlab)	-	-	-	-	-	-	-	-	-	<0.2	<0.2	0	<0.2	<0.05	0
	Fenthion	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	-	-	-	-	-	-	-	-	-
	Malathion	mg/kg	0.2 (Primary): 0.05 (Interlab)	-	-	-	-	-	-	-	-	-	<0.2	<0.2	0	<0.2	<0.05	0
	Merphos	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	-	-	-	<0.2	<0.2	0	<0.2	-	-
	Methyl parathion	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	-	-	-	<0.2	<0.2	0	<0.2	<0.2	0
	Mevinphos (Phosdrin)	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	-	-	-	<0.2	<0.2	0	<0.2	-	-
	Monocrotophos	mg/kg	2 (Primary): 0.2 (Interlab)	-	-	-	-	-	-	-	-	-	<2.0	<2.0	0	<2.0	<0.2	0
	Naled (Dibrom)	mg/kg	0.5	<0.5	<0.5	0	<0.5	-	-	-	-	-	-	-	-	-	-	-
	Naled (Dibrom)	mg/kg	0.2	-	-	-	-	-	-	-	-	-	<0.2	<0.2	0	<0.2	-	-
	Omethoate	mg/kg	2	-	-	-	-	-	-	-	-	-	<2.0	<2.0	0	<2.0	-	-
	Parathion	mg/kg	0.2	-	-	-	-	-	-	-	-	-	<0.2	<0.2	0	<0.2	<0.2	0
	Phorate	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	-	-	-	<0.2	<0.2	0	<0.2	-	-
	Pirimiphos-methyl	mg/kg	0.2	-	-	-	-	-	-	-	-	-	<0.2	<0.2	0	<0.2	-	-
	Pyrazophos	mg/kg	0.2	-	-	-	-	-	-	-	-	-	<0.2	<0.2	0	<0.2	-	-
	Ronnel	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	-	-	-	<0.2	<0.2	0	<0.2	-	-
	Terbufos	mg/kg	0.2	-	-	-	-	-	-	-	-	-	<0.2	<0.2	0	<0.2	-	-
	Trichloronate	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	-	-	-	<0.2	<0.2	0	<0.2	-	-
	Tetrachlorvinphos	mg/kg	0.2	-	-	-	-	-	-	-	-	-	<0.2	<0.2	0	<0.2	-	-
	Tokuthion	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	-	-	-	<0.2	<0.2	0	<0.2	-	-
PAH	Acenaphthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-	<0.5	<0.5	0	<0.5	<0.5	0
	Acenaphthylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-	<0.5	<0.5	0	<0.5	<0.5	0
	Anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo(a)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo(a)pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo(a)pyrene TEQ (lower bound) *	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo(a)pyrene TEQ (medium bound) *	mg/kg	0.5	0.6	0.6	0	0.6	0.6	0	-	-	-	0.6	0.6	0	0.6	0.6	0
	Benzo(a)pyrene TEQ (upper bound) *	mg/kg	0.5	1.2	1.2	0	1.2	1.2	0	-	-	-	1.2	1.2	0	1.2	1.2	0
	Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-	<0.5	<0.5	0	<0.5	<0.5	0
	Chrysene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo[b+j]fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-	<0.5	<0.5	0	<0.5	<0.5	0
	Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-	<0.5	<0.5	0	<0.5	<0.5	0
	Fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-	<0.5	<0.5	0	<0.5	<0.5	0
	Fluorene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-	<0.5	<0.5	0	<0.5	<0.5	0
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-	<0.5	<0.5	0	<0.5	<0.5	0
	Naphthalene	mg/kg	0.5 (Primary): 1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-	<0.5	<0.5	0	<0.5	<0.5	0
	Phenanthrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-	<0.5	<0.5	0	<0.5	<0.5	0
	Pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-	<0.5	<0.5	0	<0.5	<0.5	0
	Total PAHs	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-	<0.5	<0.5	0	<0.5	-	-
TPH	Naphthalene	mg/kg	0.5 (Primary): 1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	-	-	-	<0.5	<0.5	0	<0.5	<0.5	0
	C6-C10 less BTEX (F1)	mg/kg	20 (Primary): 10 (Interlab)	<20.0	<20.0	0	<20.0	<10.0	0	-	-	-	<20.0	<20.0	0	<20.0	<10.0	0
	F2-NAPHTHALENE	mg/kg	50	<50.0	<50.0	0	<50.0	<50.0	0	-	-	-	<50.0	<50.0	0	<50.0	<50.0	0
	C6 - C9	mg/kg	20 (Primary): 10 (Interlab)	<20.0	<20.0	0	<20.0	<10.0	0	-	-	-	<20.0	<20.0	0	<20.0	<10.0	0
	C10-C16	mg/kg	50	<50.0	<50.0	0	<50.0	<50.0	0	-	-	-	<50.0	<50.0	0	<50.0	<50.0	0
	C16-C34	mg/kg	100	<100.0	<100.0	0	<100.0	<100.0	0	-	-	-	<100.0	<100.0	0	<100.0	<100.0	0
	C34-C40	mg/kg	100	<100.0	<100.0	0	<100.0	<100.0	0	-	-	-	<100.0	<100.0	0	<100.0	<100.0	0
	C6 - C10	mg/kg	20 (Primary): 10 (Interlab)	<20.0	<20.0	0	<20.0	<10.0	0	-	-	-	<20.0	<20.0	0	<20.0	<10.0	0
	C10 - C14	mg/kg	20 (Primary): 50 (Interlab)	<20.0	<20.0	0	<20.0	<50.0	0	-	-	-	<20.0	<20.0	0	<20.0	<50.0	0
	C15 - C28	mg/kg	50 (Primary): 100 (Interlab)	<50.0	<50.0	0	<50.0	<100.0	0	-	-	-	<50.0	<50.0	0	<50.0	<100.0	0
	C29 - C36	mg/kg	50 (Primary): 100 (Interlab)	<50.0	<50.0	0	<50.0	<100.0	0	-	-	-	<50.0	<50.0	0	<50.0	<100.0	0
	C10 - C36 (Sum of total)	mg/kg	50	<50.0	<50.0	0	<50.0	<50.0	0	-	-	-	<50.0	<50.0	0	<50.0	<50.0	0

*RPDs have only been considered where a concentration is greater than 0 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 200 (0-10 x EQL); 30 (10-20 x EQL); 30 (> 20 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

Table LR4
Surface Water QA/QC Results
PCB Lochinvar
NTLEN202989

SDG			3458	3458		
Field ID			POND 1 SW1	QC1	**RPD**	
Sampled Date			14/01/2015	14/01/2015		
Analyte		**Units**	**EQL**			
Heavy Metal	Arsenic	mg/l	0.001	0.001	<0.001	0
	Cadmium	mg/l	0.0002	<0.0002	<0.0002	0
	Chromium	mg/l	0.001	0.005	0.005	0
	Copper	mg/l	0.001	0.005	0.006	18
	Lead	mg/l	0.001	<0.001	<0.001	0
	Mercury	mg/l	0.0001	<0.0001	<0.0001	0
	Nickel	mg/l	0.001	0.008	0.008	0
	Zinc	mg/l	0.001	0.003	0.003	0
OCP	4,4-DDE	µg/l	0.1	<0.1	<0.1	0
	a-BHC	µg/l	0.1	<0.1	<0.1	0
	Aldrin	µg/l	0.1	<0.1	<0.1	0
	b-BHC	µg/l	0.1	<0.1	<0.1	0
	Chlordane	µg/l	1	<1.0	<1.0	0
	d-BHC	µg/l	0.1	<0.1	<0.1	0
	DDD	µg/l	0.1	<0.1	<0.1	0
	DDT	µg/l	0.1	<0.1	<0.1	0
	Dieldrin	µg/l	0.1	<0.1	<0.1	0
	Endosulfan I	µg/l	0.1	<0.1	<0.1	0
	Endosulfan II	µg/l	0.1	<0.1	<0.1	0
	Endosulfan sulphate	µg/l	0.1	<0.1	<0.1	0
	Endrin	µg/l	0.1	<0.1	<0.1	0
	Endrin aldehyde	µg/l	0.1	<0.1	<0.1	0
	Endrin ketone	µg/l	0.1	<0.1	<0.1	0
	g-BHC (Lindane)	µg/l	0.1	<0.1	<0.1	0
	Heptachlor	µg/l	0.1	<0.1	<0.1	0
	Heptachlor epoxide	µg/l	0.1	<0.1	<0.1	0
	Hexachlorobenzene	µg/l	0.1	<0.1	<0.1	0
	Methoxychlor	µg/l	0.1	<0.1	<0.1	0
	Toxaphene	mg/l	0.01	<0.01	<0.01	0
OPP	Azinophos methyl	µg/l	2	<2.0	<2.0	0
	Bolstar (Sulprofos)	µg/l	2	<2.0	<2.0	0
	Chlorpyrifos	µg/l	2	<2.0	<2.0	0
	Demeton-O	µg/l	2	<2.0	<2.0	0
	Diazinon	µg/l	2	<2.0	<2.0	0
	Dichlorvos	µg/l	2	<2.0	<2.0	0
	Disulfoton	µg/l	2	<2.0	<2.0	0
	Ethion	µg/l	2	<2.0	<2.0	0
	Ethoprop	µg/l	2	<2.0	<2.0	0
	Fenitrothion	µg/l	2	<2.0	<2.0	0
	Fensulfothion	µg/l	2	<2.0	<2.0	0
	Fenthion	µg/l	2	<2.0	<2.0	0
	Merphos	mg/l	0.002	<0.002	<0.002	0
	Methyl parathion	µg/l	2	<2.0	<2.0	0
	Mevinphos (Phosdrin)	µg/l	2	<2.0	<2.0	0
	Naled (Dibrom)	µg/l	2	<2.0	<2.0	0
	Phorate	µg/l	2	<2.0	<2.0	0
	Ronnel	µg/l	2	<2.0	<2.0	0
	Trichloronate	µg/l	2	<2.0	<2.0	0
	Tokuthion	µg/l	2	<2.0	<2.0	0

*RPDs have only been considered where a concentration is greater than 0 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 200 (0-10 x EQL); 30 (10-20 x EQL); 30 (> 20 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

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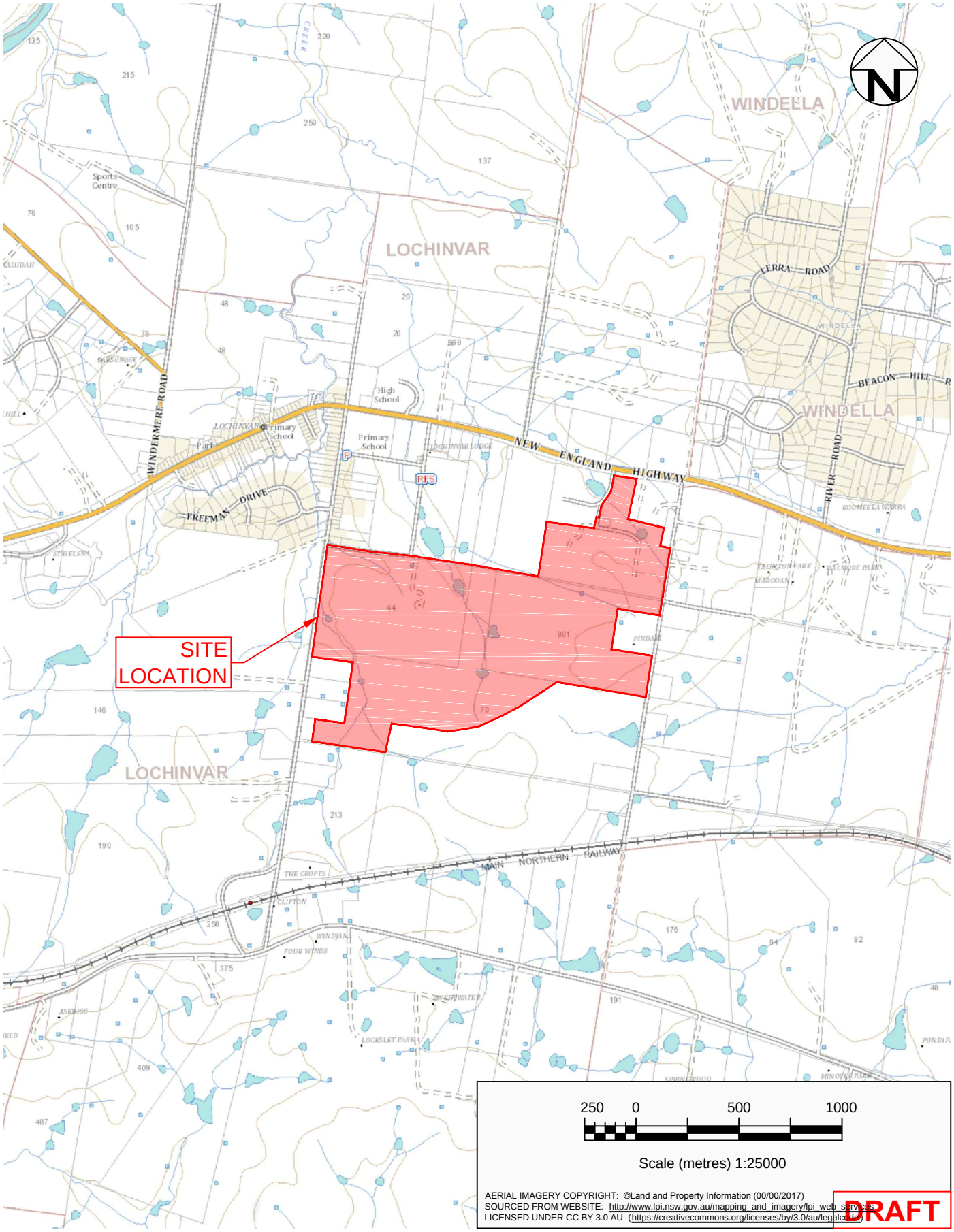
Table LR5
Equipment Rinsate and Trip Blank Results
PCB Lochinvar
NTLEN202989

			SDG	3458	3458	23-Mar-17
			Field ID	QC4	QC5	QC9
			Sampled Date	14/01/2015	14/01/2015	20/03/2017
			Sample Type	Rinsate	Trip_B	Rinsate
Analyte		**Units**	**EQL**			
Heavy Metal	Arsenic	mg/l	0.001	<0.001	-	<0.001
	Cadmium	mg/l	0.0002	<0.0002	-	<0.0002
	Chromium	mg/l	0.001	<0.001	-	<0.001
	Copper	mg/l	0.001	<0.001	-	<0.001
	Lead	mg/l	0.001	<0.001	-	<0.001
	Mercury	mg/l	0.0001	<0.0001	-	<0.0001
	Nickel	mg/l	0.001	<0.001	-	<0.001
	Zinc	mg/l	0.001	<0.001	-	<0.005
OCP	4,4-DDE	µg/l	0.1	<0.1	-	<0.1
	a-BHC	µg/l	0.1	<0.1	-	<0.1
	Aldrin	µg/l	0.1	<0.1	-	<0.1
	b-BHC	µg/l	0.1	<0.1	-	<0.1
	Chlordane	µg/l	1	<1	-	<1
	d-BHC	µg/l	0.1	<0.1	-	<0.1
	DDD	µg/l	0.1	<0.1	-	<0.1
	DDT	µg/l	0.1	<0.1	-	<0.1
	Dieldrin	µg/l	0.1	<0.1	-	<0.1
	Endosulfan I	µg/l	0.1	<0.1	-	<0.1
	Endosulfan II	µg/l	0.1	<0.1	-	<0.1
	Endosulfan sulphate	µg/l	0.1	<0.1	-	<0.1
	Endrin	µg/l	0.1	<0.1	-	<0.1
	Endrin aldehyde	µg/l	0.1	<0.1	-	<0.1
	Endrin ketone	µg/l	0.1	<0.1	-	<0.1
	g-BHC (Lindane)	µg/l	0.1	<0.1	-	<0.1
	Heptachlor	µg/l	0.1	<0.1	-	<0.1
	Heptachlor epoxide	µg/l	0.1	<0.1	-	<0.1
	Hexachlorobenzene	µg/l	0.1	<0.1	-	<0.1
	Methoxychlor	µg/l	0.1	<0.1	-	<0.1
	Toxaphene	mg/l	0.01	<0.01	-	<0.01
OPP	Azinophos methyl	µg/l	2	<2	-	<2
	Bolstar (Sulprofos)	µg/l	2	<2	-	<2
	Chlorfenvinphos	µg/l	2	-	-	<2
	Chlorpyrifos	µg/l	2	<2	-	<20
	Chlorpyrifos-methyl	mg/l	0.002	-	-	<0.002
	Coumaphos	µg/l	20	-	-	<20
	Demeton-O	µg/l	2	<2	-	<2
	Demeton-S	µg/l	20	-	-	<20
	Diazinon	µg/l	2	<2	-	<2
	Dichlorvos	µg/l	2	<2	-	<2
	Dimethoate	µg/l	2	-	-	<2
	Disulfoton	µg/l	2	<2	-	<2
	EPN	µg/l	2	-	-	<2
	Ethion	µg/l	2	<2	-	<2
	Ethoprop	µg/l	2	<2	-	<2
	Fenitrothion	µg/l	2	<2	-	<2
	Fensulfothion	µg/l	2	<2	-	<2
	Fenthion	µg/l	2	<2	-	<2
	Malathion	µg/l	2	-	-	<2
	Merphos	mg/l	0.002	<0.002	-	<0.002
	Methyl parathion	µg/l	2	<2	-	<2
	Mevinphos (Phosdrin)	µg/l	2	<2	-	<2
	Monocrotophos	µg/l	2	-	-	<2
	Naled (Dibrom)	µg/l	2	<2	-	<2
	Omethoate	µg/l	2	-	-	<2
	Parathion	µg/l	2	-	-	<2
	Phorate	µg/l	2	<2	-	<2
	Pirimiphos-methyl	mg/l	0.02	-	-	<0.02
	Pyrazophos	µg/l	2	-	-	<2
	Ronnel	µg/l	2	<2	-	<2
	Terbufos	µg/l	2	-	-	<2
	Trichloronate	µg/l	2	<2	-	<2
	Tetrachlorvinphos	mg/l	0.002	-	-	<0.002
	Tokuthion	µg/l	2	<2	-	<2
Organic	2,4,5-Trichlorophenoxy acetic acid	mg/l	0.001	-	-	<0.001
	2,4,5-TP (Silvex)	mg/l	0.001	-	-	<0.001
	2,4-Dichlorophenoxy acetic acid	mg/l	0.001	-	-	<0.001
	2,4-Dichlorprop	mg/l	0.001	-	-	<0.001
	4-(2,4-Dichlorophenoxy) butyric acid (2,4-DB)	µg/l	1	-	-	<1
	4,6-Dinitro-2-methylphenol	µg/l	1	-	-	<1
	Actril (loxynil)	mg/l	0.001	-	-	<0.001
	Dicamba	µg/l	1	-	-	<1
	Dinoseb	µg/l	1	-	-	<1
	Endosulfan I	µg/l	0.1	-	-	
	2-Methyl-4-chlorophenoxy acetic acid	µg/l	1	-	-	<1
	2-Methyl-4-Chlorophenoxy butanoic acid	µg/l	1	-	-	<1
	Mecoprop	µg/l	1	-	-	<1
TPH	Naphthalene	µg/l	10	<20	<20	<10
	F2-NAPHTHALENE	mg/l	0.05	<0.05	-	<0.05
	C6 - C9	µg/l	20	<20	<20	<20
	C6-C10 less BTEX (F1)	mg/l	0.02	<0.02	<0.02	<0.02
	C10-C16	mg/l	0.05	<0.05	-	<0.05
	C16-C34	mg/l	0.1	<0.1	-	<0.1
	C34-C40	mg/l	0.1	<0.1	-	<0.1
	C6 - C10	mg/l	0.02	<0.02	<0.02	<0.02
	C10 - C14	µg/l	50	<50	-	<50
	C15 - C28	µg/l	100	<100	-	<100
	C29 - C36	µg/l	100	<100	-	<100
	C10 - C36 (Sum of total)	µg/l	100	<100	-	<100
PAH	Acenaphthene	µg/l	1	<1	-	<1
	Acenaphthylene	µg/l	1	<1	-	<1
	Anthracene	µg/l	1	<1	-	<1
	Benzo(a)anthracene	µg/l	1	<1	-	<1
	Benzo(a)pyrene	µg/l	1	<1	-	<1
	Benzo(g,h,i)perylene	µg/l	1	<1	-	<1
	Benzo(k)fluoranthene	µg/l	1	<1	-	<1
	Chrysene	µg/l	1	<1	-	<1
	Benzo[b+j]fluoranthene	mg/l	0.001	<0.001	-	<0.001
	Dibenz(a,h)anthracene	µg/l	1	<1	-	<1
	Fluoranthene	µg/l	1	<1	-	<1
	Fluorene	µg/l	1	<1	-	<1
	Indeno(1,2,3-c,d)pyrene	µg/l	1	<1	-	<1
	Naphthalene	µg/l	1	<1	-	<1
	Phenanthrene	µg/l	1	<1	-	<1
	Pyrene	µg/l	1	<1	-	<1
	Total PAHs	µg/l	1	<1	-	<1
BTEX	Benzene	µg/l	1	<1	<1	<1
	Ethylbenzene	µg/l	1	<1	<1	<1
	Toluene	µg/l	1	<1	<1	<1
	Xylene (m & p)	µg/l	2	<2	<2	<2
	Xylene (o)	µg/l	1	<1	<1	<1
	Xylene Total	µg/l	3	<3	<3	<3

Figures



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approved	-
date	19 / 04 / 17
scale	AS SHOWN
original size	A4

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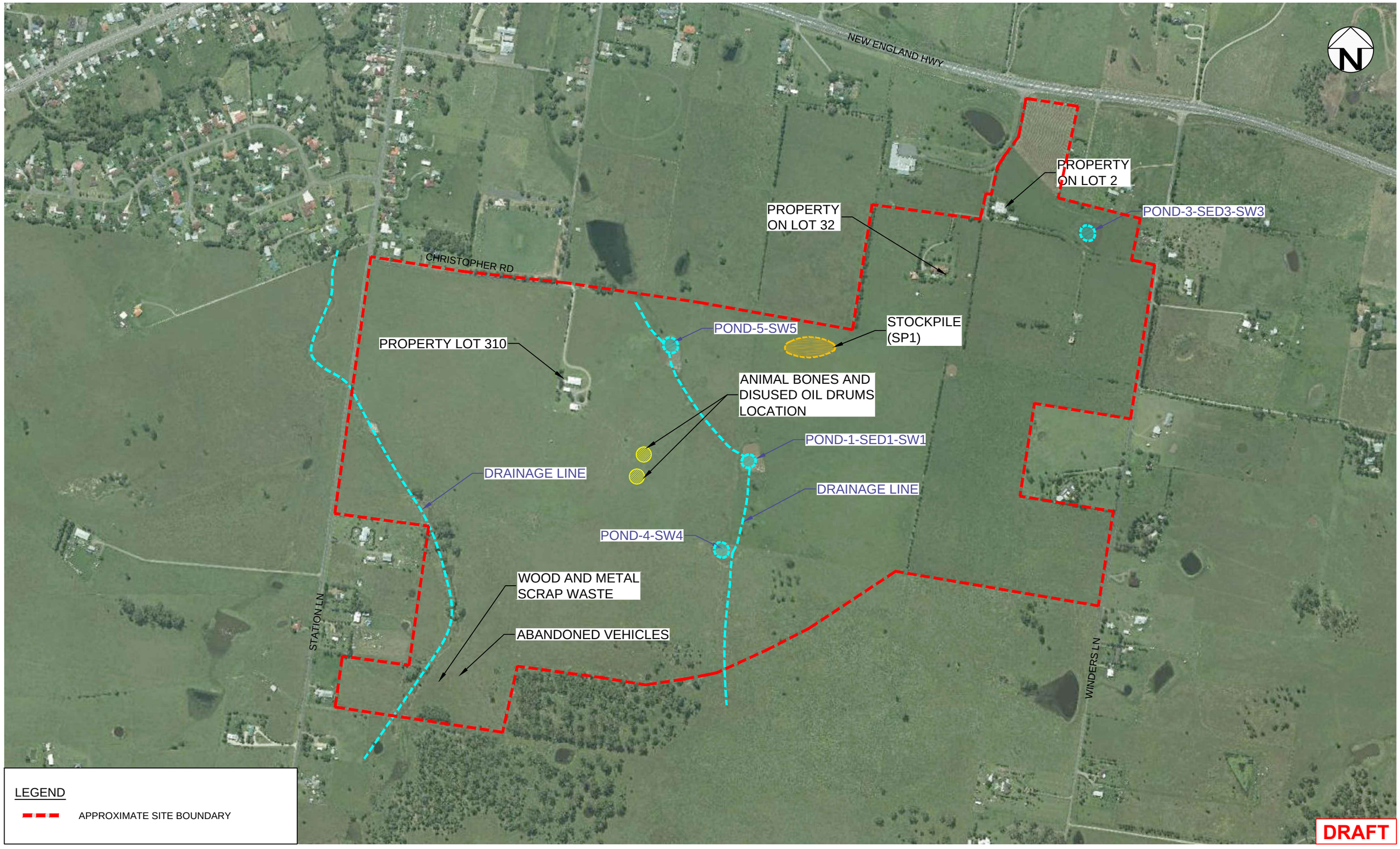
client: PULVER COOPER & BLACKLEY

project: PHASE 1 & 2 CONTAMINATION ASSESSMENT
WINDERS LANE, LOCHINVAR NSW

title: SITE LOCATION PLAN

project no: 754-NTLEN202989AA | figure no: FIGURE 1 | rev: A

PLOT DATE: 19/04/2017 8:59:45 PM DWG FILE: F:\1. PROJECTS\1. SYDENEN\VOTHER OFFICES\NTL-ENNTLEN202989\CAD\NTLEN202989-AA.DWG



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	A	ORIGINAL ISSUE			

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Scale (metres) 1:7500

drawn	FA / SB
approved	-
date	19 / 04 / 17
scale	AS SHOWN
original size	A3

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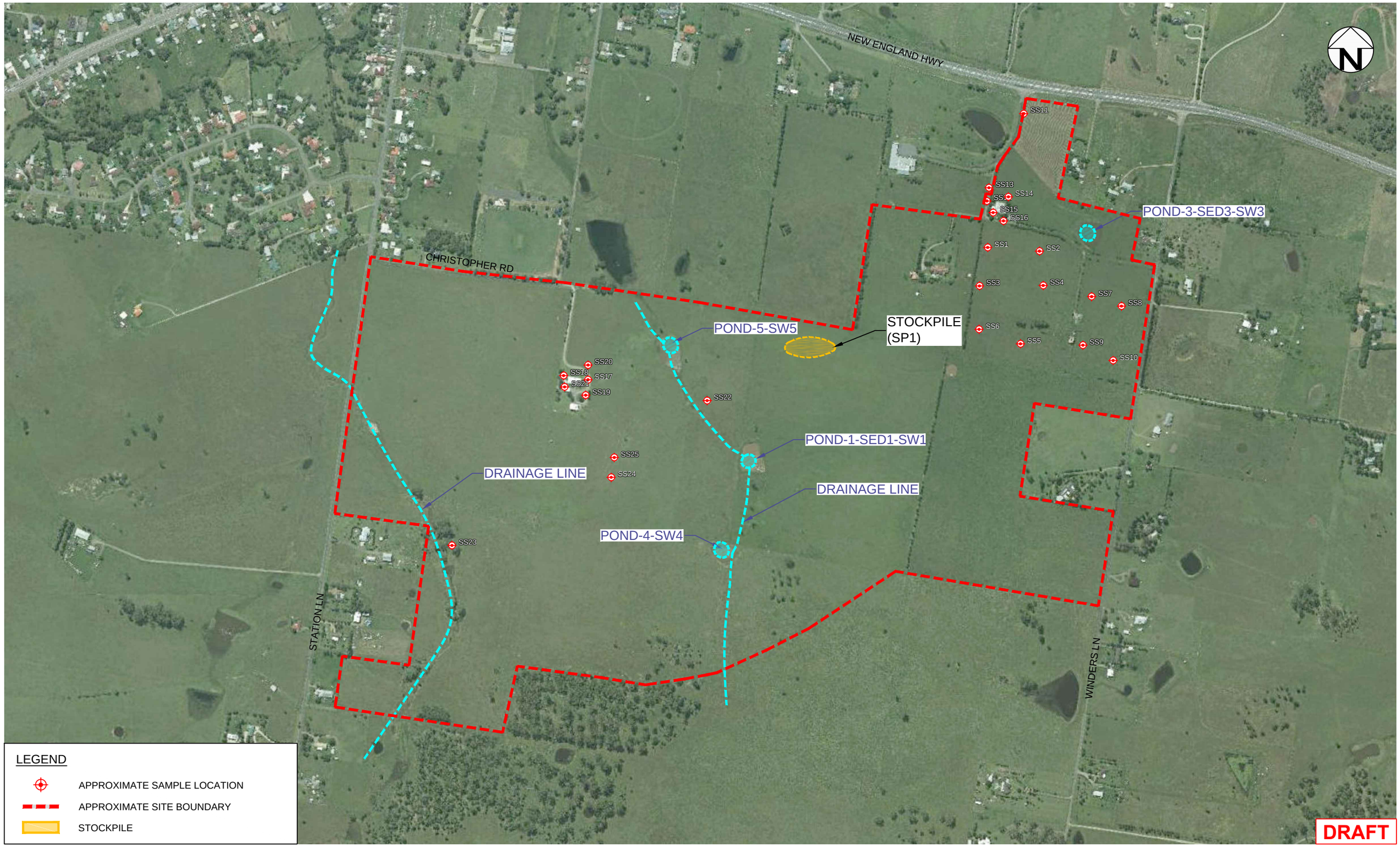
client: PULVER COOPER & BLACKLEY

project: PHASE 1 & 2 CONTAMINATION ASSESSMENT
WINDERS LANE, LOCHINVAR NSW

title: SITE FEATURE PLAN

project no: 754-NTLEN202989AA | figure no: FIGURE 2 | rev: A

PLOT DATE: 19/04/2017 8:59:46 PM DWG FILE: F:\1. PROJECTS\1. SYDNEN\OTHER OFFICES\NTL-ENNTLEN202989\CAD\NTLEN202989-AA.DWG



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Scale (metres) 1:7500

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approved	-
date	19 / 04 / 17
scale	AS SHOWN
original size	A3

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client: PULVER COOPER & BLACKLEY

project: PHASE 1 & 2 CONTAMINATION ASSESSMENT
WINDERS LANE, LOCHINVAR NSW

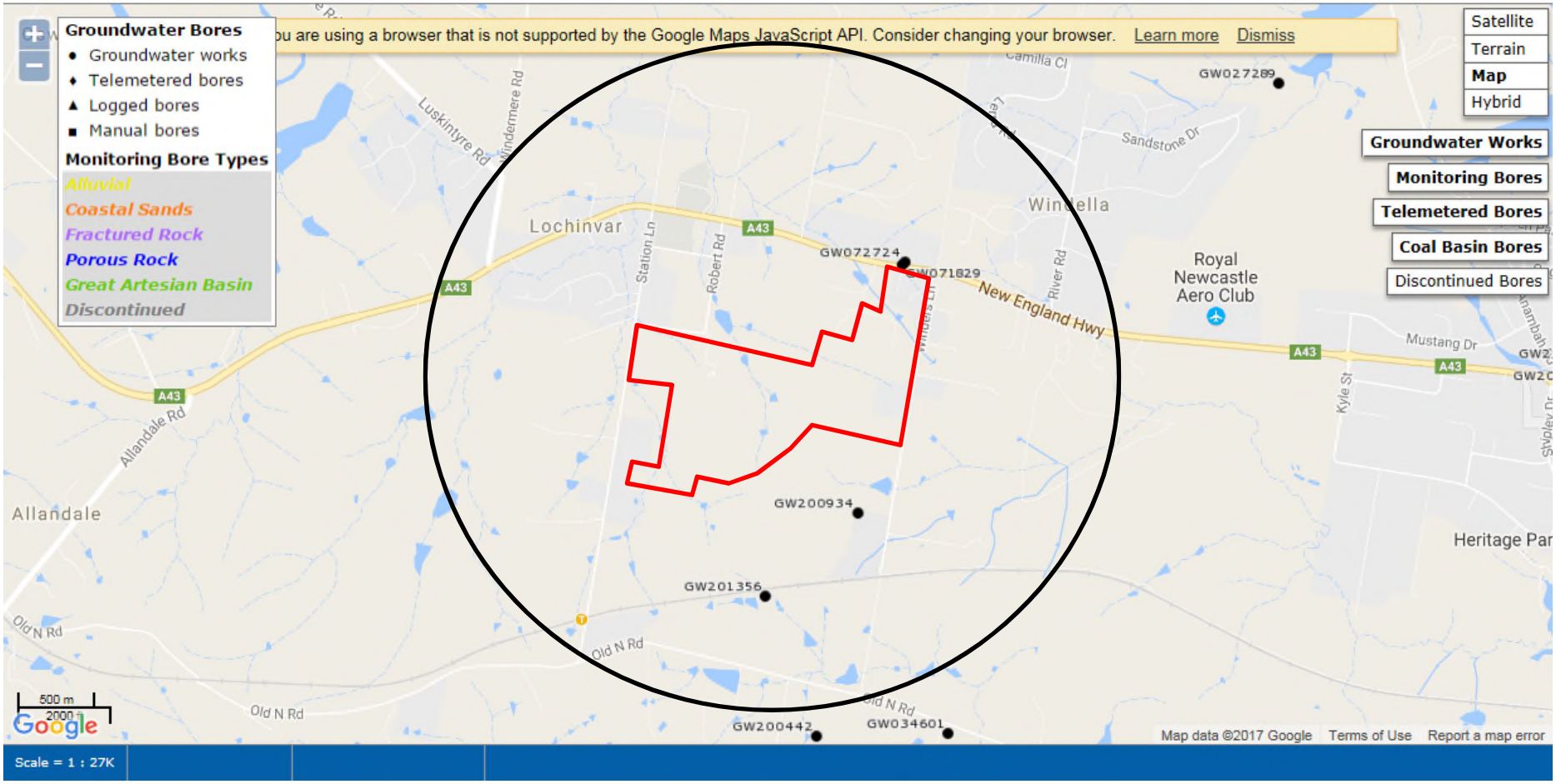
title: SAMPLE LOCATIONS

project no: 754-NTLEN202989AA | figure no: FIGURE 3 | rev: A

PLOT DATE: 19/04/2017 8:59:48 PM DWG FILE: F:\1. PROJECTS\1. SYDNEY\NV\OTHER OFFICES\NTL-ENNTLEN202989\CAD\NTLEN202989-AA.DWG

Appendix A - Groundwater Bore Search

LOCHINVAR REGISTERED MONITORING WELLS



Site Boundary

1km Radius around site

NSW Office of Water
Work Summary

GW071829

Licence:
Licence Status:
Authorised Purpose(s):
Intended Purpose(s): TOWN WATER SUPPLY

Work Type: Bore
Work Status: Supply Obtained
Construct.Method:
Owner Type:

Commenced Date:
Completion Date: 01/10/1992
Final Depth: 16.00 m
Drilled Depth: 16.00 m

Contractor Name:
Driller:
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m): 16.000
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:			
Licensed:	NORTH	NORTH.025	68

Region: 20 - Hunter
River Basin: 210 - HUNTER RIVER
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 45.50 m (A.H.D.)
Elevation Source: Est. Contour 8-15M.
Northing: 6380711.0
Easting: 356617.0
Latitude: 32°42'07.3"S
Longitude: 151°28'13.1"E

GS Map: -
MGA Zone: 0
Coordinate Source: GD.,ACC.MAP

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	1	Casing	P.V.C.	0.00	0.00	152			

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

Remarks

26/11/2009: Updated details as per existing data.

***** End of GW071829 *****

NSW Office of Water
Work Summary

GW072724

Licence:
Licence Status:
Authorised Purpose (s):
Intended Purpose(s): STOCK, DOMESTIC, FARMING

Work Type: Bore
Work Status:
Construct.Method:
Owner Type: Private

Commenced Date:
Completion Date: 31/12/1992
Final Depth: 70.00 m
Drilled Depth:

Contractor Name:
Driller:
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m):
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	NORTH	NORTH.025	L220 DP246447
Licensed:			

Region: 20 - Hunter
River Basin: 210 - HUNTER RIVER
Area/District:
CMA Map: 9132-1S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6380726.0
Easting: 356630.0
Latitude: 32°42'06.8"S
Longitude: 151°28'13.6"E

GS Map: -
MGA Zone: 0
Coordinate Source: GD.,ACC.GIS

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	1	Casing	P.V.C.	0.00	0.00	152			

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

Remarks

31/12/1992: ACC = 7

***** End of GW072724 *****

NSW Office of Water
Work Summary

GW200934

Licence: 20BL167816 **Licence Status:** ACTIVE

Authorised Purpose (s): DOMESTIC
Intended Purpose(s): DOMESTIC

Work Type: Bore
Work Status: Supply Obtained
Construct.Method:
Owner Type: Private

Commenced Date:
Completion Date: 03/03/2000
Final Depth: 25.00 m
Drilled Depth: 25.00 m

Contractor Name: HUNTER DRILLING SERVICES PTY LTD
Driller: David Hall Thomson
Assistant Driller:

Property: N/A
GWMA:
GW Zone:
Standing Water Level: 12.000
Salinity: Fair
Yield: 0.200

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	NORTH	NORTH.25	1//746278
Licensed:			

Region: 20 - Hunter
River Basin: - Unknown
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6379270.0
Easting: 356377.0
Latitude: 32°42'54.0"S
Longitude: 151°28'03.1"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		Annulus	Waterworn/Rounded	0.00	0.00				
1	1	Opening	Slots - Horizontal	0.00	0.00			1	Sawn, PVC, A: 2.00mm
1	1	Casing	P.V.C.	0.00	25.00	150	138		Seated on Bottom, Glued

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)
12.00	17.00	5.00	Unknown	12.00					

Geologists Log
Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	1.00	1.00	BLACK SOIL	Soil	
1.00	7.00	6.00	BASALT WEATHERED AND DECOMPOSED	Basalt	
7.00	12.00	5.00	WEATHERED BASALT	Basalt	
12.00	17.00	5.00	BASALT FRESH SOFT FINE GRAINED	Basalt	
17.00	25.00	8.00	BASALT FRESH HARD	Basalt	

Remarks

***** End of GW200934 *****

NSW Office of Water
Work Summary

GW201356

Licence: 20BL172372 **Licence Status:** ACTIVE

Authorised Purpose (s): MONITORING BORE
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method: Auger - Solid Flight
Owner Type: Private

Commenced Date:
Completion Date: 03/12/2009
Final Depth: 6.30 m
Drilled Depth: 6.30 m

Contractor Name: Total Drilling
Driller: Christopher David Kiernan
Assistant Driller: Ben Kiernan

Property: NA 3 WILLIAM STREET GILLIESTON HEIGHTS 2321
GWMA:
GW Zone:
Standing Water Level:
Salinity:
Yield:

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	NORTH	NORTH.25	63//564264
Licensed:			

Region: 20 - Hunter
River Basin: 210 - HUNTER RIVER
Area/District:
CMA Map: 9132-1S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6378783.0
Easting: 355843.0
Latitude: 32°43'09.5"S
Longitude: 151°27'42.3"E

GS Map: -
MGA Zone: 0
Coordinate Source: GPS - Global Positioning System

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	6.30	150			Auger - Solid Flight
1		Annulus	Cement	0.00	0.10	150	50		PL:Poured/Shovelled
1		Annulus	Bentonite	0.10	3.20	150	50		PL:Poured/Shovelled
1		Annulus	Waterworn/Rounded	3.20	6.30	150	50		Graded, PL:Poured/Shovelled
1	1	Casing	Pvc Class 18	0.00	6.30	50	44		Seated on Bottom, Screwed
1	1	Opening	Slots - Horizontal	3.30	6.30	50		1	Mechanically Slotted, PVC Class 18, Screwed, SL: 45.0mm, A: 6.00mm

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	Sand, fine grained, yellow brown, organic matter	Sand	
0.20	1.00	0.80	Clay, medium, brown mottled, trace silt	Clay	
1.00	2.50	1.50	Clay, heavy, white yellow, trace sand	Clay	
2.50	6.30	3.80	Clay, heavy, yellow, mottled white	Clay	

Remarks

03/12/2009: Form A Remarks:
Nat Carling, 30-Mar-2012; GPS provided by the driller. No completion date provided, taken from driller's signature on the form.

***** End of GW201356 *****

Appendix B - Historical Titles Search

ADVANCE LEGAL SEARCHERS PTY LIMITED

(ACN 147 943 842)
ABN 82 147 943 842

P.O. Box 149
Yagoona NSW 2199

Telephone: +612 9644 679
Mobile: 0412 169 809
Facsimile: +612 8076 3026
Email: alsearch@optusnet.com.au

12th January, 2015

COFFEY ENVIROMENTS LIMITED
19 Warabrook Boulevard,
WARABROOK, NSW 2304

Attention: Libby Betz,

RE: **801 New England Highway,**
Lochinvar
WARA 15-0002

Current Search

Folio Identifier 32/1132263 (title attached)
DP 1132263 (plan attached)
Dated 06th January, 2015
Registered Proprietor:
EDWIN JAMES AIRD JUNIOR

Title Tree
Lot 32 DP 1132263

Folio Identifier 32/1132263

(a) **(b)**

Folio Identifier 3/718712 Folio Identifier 311/1034974

(ai) **(aii)** Folio Identifier 2/746278

CTVol 13952 Folio 48 CA 8487 CA 18539

IVA 28533 Conveyance Bk 2954 No 9 Conveyance Bk 3560 No 683

Conveyance Book 3283 No 358 / Conveyance Bk 3501 No 311

Conveyance Book 2954 No 9 / Conveyance Bk 3478 No 430

Conveyance Bk 2809 No 356 Conveyance Bk 1400 No 627

Conveyance Bk 2452 No 206 Acknow Bk 1397 No 651

Conveyance Bk 2117 No 218 Conveyance Bk 2117 No 217 ****

Conveyance Bk 1218 No 422

Conveyance Bk 1102 No 980

****

Summary of proprietor(s)
Lot 32 DP 1132263

Year	Proprietor
	(Lot 32 DP 1132263)
2009 – todate	Edwin James Aird, junior

See Notes (a) & (b)

Note (a)

	(Lot 3 DP 718712)
1990 – 2009	Edwin James Aird, junior
1985 – 1990	Edwin James Aird, retired Ellie Aird Airds Pty Limited

See Notes (ai) & (aii)

Note (ai)

	(Lot 1 DP 556685 – CTVol 13952 Fol 48)
1980 – 1985	Airds Pty Limited
1979 – 1980	Airds Pty Limited *(Australian and New Zealand Banking Group Limited, mortgagee)*
	(Lot 1 of Subdivision of Lots 20 & 21 of Windermere Estate of Portion 68 Parish Gosforth – Conv Bk 3283 No 358)
1976 – 1979	Airds Pty Limited
	(Lot 1 of Subdivision of Lots 20 & 21 of Windermere Estate of Portion 68 Parish Gosforth – Conv Bk 2954 No 9)
1969 – 1976	Edwin James Aird, manufacturer Ellie Aird
	(Lot 1 of Subdivision of Lots 20 & 21 of Windermere Estate of Portion 68 Parish Gosforth – Conv Bk 2809 No 356)
1966 – 1969	Alexander William Benton, farming contractor Neta Eileen Benton
	(Lots 20, 21 & 26 of Windermere Estate of Portion 68 Parish Gosforth – Conv Bk 2452 No 206)
1958 – 1966	Kate Aldridge Bruhn, wife of minister of religion
1954 – 1958	Kate Aldridge Bruhn, wife of minister of religion / executrix Ethel Florence Winder, estate David William Winder, estate Violet Emily Moore, married woman Madge Ruth Ernst, widow

Cont.

Cont.

	(Part of Lots 20, 21 & 26 of the Windermere Estate and other lands – Conv Bk 2117 No 217)
1950 – 1954	Violet Emily Moore, married woman Madge Ruth Ernst, widow Mary Isobel Sinclair, executrix Ellen Winder, estate Ethel Florence Emily Winder, spinster David William Winder, farmer
1929 – 1950	Ethel Florence Emily Winder, spinster /executrix Annie Winder, estate Mary Isobel Sinclair, executrix Ellen Winder, estate Hugh Wallace Winder, estate
	(Part of Lots 20, 21 & 26 of the Windermere Estate and other lands – Conv Bk 1102 No 980)
1917 – 1929	Annie Winder, spinster Ellen Winder, spinster Ethel Winder, spinster Hugh Wallace Winder, farmer
1882 – 1917	Charles Simpson, executor Thomas Winder, estate

****

Note (aii)

	(Part of Lots 20, 21 & 26 of the Windermere Estate and other lands – Conv Bk 2954 No 9)
1969 – 1985	Edwin James Aird, manufacturer Ellie Aird
	(Part of Lots 20, 21 & 26 of the Windermere Estate and other lands – Conv Bk 2809 No 356)
1966 – 1969	Alexander William Benton, farming contractor Neta Eileen Benton
	(Part of Lots 20, 21 & 26 of the Windermere Estate and other lands – Conv Bk 2452 No 206)
1958 – 1966	Kate Aldridge Bruhn, wife of minister of religion
1954 – 1958	Kate Aldridge Bruhn, wife of minister of religion / executrix David William Winder, estate
	(Part of Lots 20, 21 & 26 of the Windermere Estate and other lands – Conv Bk 2452 No 206)
1950 – 1954	David William Winder, dairy farmer
1929 – 1950	Florence Emily Winder, executrix Annie Winder, estate Mary Isobel Sinclair, executrix Ellen Winder, estate Ethel Florence Emily Winder Hugh Wallace Winder, estate
	(Part of Lots 20, 21 & 26 of the Windermere Estate and other lands – Conv Bk 1102 No 980)
1917 – 1929	Annie Winder, spinster Ellen Winder, spinster Ethel Winder, spinster Hugh Wallace Winder, farmer
1882 – 1917	Charles Simpson, executor Thomas Winder, estate

****

Note (b)

	(Lot 311 DP 1034974)
2002 – 2009	Edwin James Aird, junior
2001 – 2002	Richard Karl Huirf
	(Lot 2 DP 746278)
1987 – 2001	Richard Karl Huirf
	(Lots 25 & 30 of Melville estate and other lands – Conv Bk 3560 No 683)
1983 – 1987	Edwin James Aird, junior, company director
	(Lots 25 & 30 of Melville estate and other lands – Conv Bk 3501 No 311)
1982 – 1983	Abturka Pty Limited
	(Lots 22 to 27 of Melville estate and other lands – Conv Bk 3478 No 430)
1981 – 1982	Alumax of Australia Pty Limited
1980 – 1981	Francis Joseph Heagney, company secretary / executor Francis Bertrand Heagney, estate
	(Lots 22 to 27 of Melville estate and other lands – Conv Bk 1400 No 627)
1925 – 1980	Francis Bertrand Heagney, farmer
	(Lots 22 to 27 of Melville estate and other lands – Ackn Bk 1397 No 651)
1925 – 1925	Francis Heagney, farmer
1925 – 1925	Francis Heagney, farmer / executor Patrick Heagney, estate
1883 – 1925	Francis Heagney, farmer Patrick Heagney, farmer / executor Michael Connolly, farmer / executor Patrick Markham, estate

****

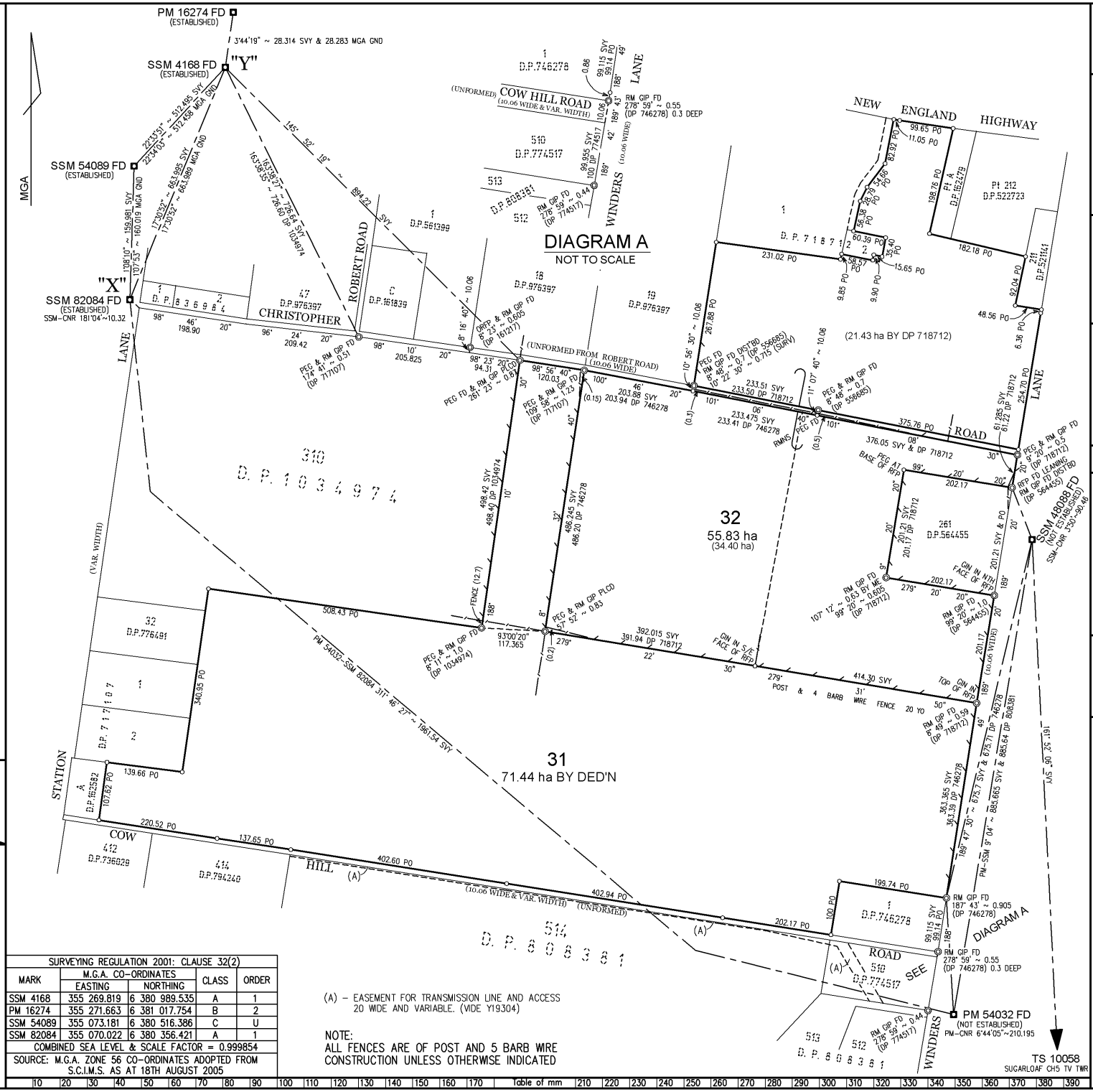
PLAN FORM 2

Plan Drawing only to appear inthis space

ePlan

SIGNATURE AND SEALS ONLY.

FOR SIGNATURES SEALS AND CERTIFICATES SEE SIGNATURE FORM



SURVEYING REGULATION 2001: CLAUSE 32(2)				
MARK	M.G.A. CO-ORDINATES EASTING	M.G.A. CO-ORDINATES NORTHING	CLASS	ORDER
SSM 4168	355 269.819	6 380 989.535	A	1
PM 16274	355 271.663	6 381 017.754	B	2
SSM 54089	355 073.181	6 380 516.386	C	U
SSM 82084	355 070.022	6 380 356.421	A	1
COMBINED SEA LEVEL & SCALE FACTOR = 0.999854				
SOURCE: M.G.A. ZONE 56 CO-ORDINATES ADOPTED FROM S.C.I.M.S. AS AT 18TH AUGUST 2005				

(A) – EASEMENT FOR TRANSMISSION LINE AND ACCESS 20 WIDE AND VARIABLE. (VIDE Y19304)

NOTE:
ALL FENCES ARE OF POST AND 5 BARB WIRE CONSTRUCTION UNLESS OTHERWISE INDICATED

Crown Lands Office Approval

PLAN APPROVED ..... Authorised Officer

Land District .....

Paper No. .....

Field Book ..... pages .....

Subdivision Certificate

I hereby certify that the provisions of s.109J of the Environmental Planning and Assessment Act 1979 have been satisfied in relation to the proposed

SUBDIVISION ..... set..out herein

* (Insert "subdivision" or "new road")

SEE SIGNATURES FORM

* Authorised Person/General Manager/Accredited Certifier

(Insert "new road", "subdivision" or "consolidation") set out herein

Consent Authority : MAITLAND CITY COUNCIL

Date of Endorsement : 13.11.2008

Accreditation no :

Subdivision Certificate no : 080923

File no. : DA08-923

*Note: When the plan is to be lodged electronically in the land Titles Office it should include a signature in an electronic or digital format approved by the Register-General.

*Delete whichever is inapplicable

DP1132263

Registered: 27-1-2009

Title System: TORRENS

Purpose: SUBDIVISION

Ref.Map: MAITLAND SHEET 12 # U3680 - 9 #

Last Plan: DP 1034974 & DP 718712

PLAN OF SUBDIVISION OF LOT 311 DP 1034974 & LOT 3 DP 718712

lengths are in metres. Reduction Ratio 1: 5000

L.G.A.: MAITLAND

Locality: LOCHINVAR

Parish: GOSFORTH

County: NORTHUMBERLAND

This is sheet 1 of my plan in sheets. (Delete if inapplicable)

Survey Regulation 2001

I, BRETT DOUGLAS KITTEL

of PULVER COOPER & BLACKLEY, 1/493 HIGH STREET, MAITLAND 2320

a surveyor registered under the Surveying Act 2002, hereby certify that the survey represented in this plan is accurate, has been made in accordance with the Surveying Regulation 2001 and was completed on 26th AUGUST 2005

The survey relates to Pt LOTS 31 & 32

(here specify the land actually surveyed, or specify any land shown in the plan that is not the subject of the survey)

Datum Line: X – Y

Zone: Suburban/Country

(Signature) SEE SIGNATURES FORM

Surveyor registered under the Surveying Act 2002

Plans used in preparation of survey/compilation.

DP 161217	DP 718712
DP 161839	DP 746278
DP 556685	DP 774517
DP 564455	DP 808381
DP 638763	DP 836984
DP 717107	DP 1034974

PANEL FOR USE ONLY for statements of intention to dedicate public roads, to create public reserves, drainage,reserves, easements, restrictions on the use of land or positive convenants

* OFFICE USE ONLY

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 Table of mm 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390

SURVEYOR'S REFERENCE: 03-192 "CHECKLIST" "2005M7100 (998) Partial Survey"

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

DRAWING: F:\03_192\SURVEYING\03192_DP_01_B.dwg

Req:R792618 /Doc:DP 1132263 P /Rev:29-Jan-2009 /Sts:SC.OK /Prt:06-Jan-2015 09:17 /Pgs:ALL /Seq:1 of 2 DP1132263 /Src:T /Ref:ails

CERTIFICATES, SIGNATURES AND SEALS

PLAN OF SUBDIVISION OF LOT 311 DP1034974 & LOT 3 DP718712

DP1132263

Registered: 27-01-2009

* OFFICE USE ONLY

Surveying Regulation, 2001

I, BRETT DOUGLAS KITTEL
of PULVER COOPER & BLACKLEY,
\98 LAWES STREET, EAST MAITLAND NSW 2323
a surveyor registered under the *Surveying Act, 2002*, hereby certify that the survey represented in this plan is accurate, has been made in accordance with the *Surveying Regulation, 2006* and was completed on:. 26ST August 2005

The survey relates to Pt LOTS 31 & 32.....
.....
(specify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey)

Signature ..... BRETT KITTEL *Dated:26/08/05*
Surveyor registered under the Surveying Act, 2002

Datum Line: X-Y.....
Type: ~~Urban~~/Rural

Crown Lands NSW/Western Lands Office Approval

I.....in approving this plan certify
(Authorised Officer)
that all necessary approvals in regard to the allocation of the land shown herein have been given.

Signature:.....
Date:.....
File Number:.....
Office:.....

Subdivision Certificate

I certify that the provisions of s.109J of the Environmental Planning and Assessment Act 1979 have been satisfied in relation to:

the proposed.....SUBDIVISION..... set out herein

(insert 'subdivision' or 'new road')

.....

* Authorised Person/~~General Manager/Accredited Certifier~~

Consent Authority: .....MAITLAND CITY COUNCIL.....
Date of Endorsement: .....13.11.08.....
~~Accreditation no~~: .....
Subdivision Certificate no: .....080923.....
File no: .....DA08-923.....

* Delete whichever is inapplicable.

SIGNATURES, SEALS and STATEMENTS of intention to dedicate public roads or to create public reserves and drainage reserves.

Executed for and on behalf of Stockland Development Pty Limited ACN 000 064 835 by its duly authorised attorney under Power of Attorney registered in Book 4541 No. 455 who declares that he has no notification of revocation of the said Power of Attorney in the presence of:

.....
Barry John Mann

.....
Signature of Witness

PETER LAWRENCE
Name of Witness

133 Castlereagh Street, Sydney
Address of Witness

MAITLAND MUTUAL BUILDING SOCIETY LIMITED ACN 087 651 983 BY ITS ATTORNEY

(name) RODNEY WILLIAMS

(position) SECURITIES MANAGER

PURSUANT TO POWER OF ATTORNEY REGISTERED BOOK 4521 No. 745

DATED: 27 NOVEMBER 2008

(signed) .....

.....
(WITNESS)

Use PLAN FORM 6A for additional certificates, signatures and seals

SURVEYOR'S REFERENCE: 03-192 "CHECKLIST" "2005M7100 (998) Partial Survey"

ADVANCE LEGAL SEARCHERS PTY LTD

(ACN 147 943 842)
ABN 82 147 943 842

18/36 Osborne Road,
Manly NSW 2095

Telephone: +612 9977 6713
Mobile: 0412 169 809
Facsimile: +612 8076 3026
Email: search@alsearchers.com.au

13th March, 2017

COFFEY ENVIRONMENTS PTY LTD
19 Warabrook Boulevard,
WARABROOK NSW 2304

Attention: Damien Hendrickx

RE: **Lochinvar**
PO WARA17-0233

Note 1:	**Lot 2**	**DP 718712**	(page 1)
Note 2:	**Lot 310**	**DP 1034974**	(page 5)
Note 3:	**Lot 311**	**DP 1135580**	(page 8)

Note 1:

Current Search

Folio Identifier 2/718712 (title attached)
DP 718712 (plan attached)
Dated 09th March, 2017
Registered Proprietor:
EDWIN JAMES AIRD
CAROL ANN AIRD

Title Tree
Lot 2 DP 718712

Folio Identifier 2/718712

CA 8487

Conveyance Book 2954 No. 9

Conveyance Book 2809 No. 356

Conveyance Book 2452 No. 206

Conveyance Book 2117 No’s 217 & 218

Conveyance Book 1573 No. 89

Conveyance Book 1102 No. 980

****

Summary of proprietor(s)
Lot 2 DP 718712

Year	Proprietor(s)
	(**Lot 2 DP 718712)**
2015 – todate	Edwin James Aird Carol Ann Aird
2015 – 2015	Edwin James Aird Merran Power
2003 – 2015	Edwin James Aird, manufacturer
1985 – 2003	Edwin James Aird, manufacturer Ellie Aird, his wife
	(Allotment 26 of Windermere Estate and other land – Area 47 Acres 1 Rood 35 Perches and other land – Conv Bk 2954 No. 9)
1969 – 1985	Edwin James Aird, manufacturer Ellie Aird, his wife
	(Allotment 26 of Windermere Estate and other land – Area 47 Acres 1 Rood 35 Perches and other land – Conv Bk 2809 No. 356)
1966 – 1969	Alexander William Benton, farming contractor Neta Eileen Benton, his wife
	(Allotment 26 of Windermere Estate and other land – Area 47 Acres 1 Rood 35 Perches and other land – Conv Bk 2452 No. 206)
1958 – 1966	Kate Aldridge Bruhn, wife of David Gilbert Bruhn, minister of religion
1954 – 1958	Kate Aldridge Bruhn, wife of David Gilbert Bruhn, minister of religion / executrix Violet Emily Moore, wife of George Deakin Moore, fitter / executrix Madge Ruth Ernest, widow Ethel Florence Winder, estate David William Winder, estate
	(Allotment 26 of Windermere Estate and other land – Area 47 Acres 1 Rood 35 Perches and other land – Conv Bk 2117 No's 217 & 218)
1950 – 1954	Violet Emily Moore, wife of George Deakin Moore, fitter Madge Ruth Ernest, widow David William Winder, farmer Ethel Florence Emily Winder, spinster
1950 – 1950	Ethel Florence Emily Winder, spinster / executrix Mary Isobel Sinclair, executrix Hugh Wallace Winder, estate

Cont.

Cont.

	(Allotment 26 of Windermere Estate and other land – Area 47 Acres 1 Rood 35 Perches and other land – Conv Bk 1573 No. 89)
1929 – 1950	Ethel Florence Emily Winder, spinster Hugh Wallace Winder, farmer
1929 – 1929	Ethel Florence Emily Winder, spinster / executrix Hugh Wallace Winder, farmer / executor Annie Winder, estate Ellen Winder, estate
	(Allotment 26 of Windermere Estate and other land – Area 47 Acres 1 Rood 35 Perches and other land – Conv Bk 1102 No. 980)
1917 – 1929	Annie Winder, spinster Ellen Winder, spinster Ethel Winder, spinster Hugh Wallace Winder, farmer

****

Note 2:

Current Search

Folio Identifier 310/1034974 (title attached)
DP 1034974 (plan attached)
Dated 09th March, 2017
Registered Proprietor:
RICHARD KARL HVIRF

Title Tree
Lot 310 DP 1034974

Folio Identifier 310/1034974

Folio Identifier 31/776491

Folio Identifier 3/717107

(a)	**(b)**
CTVol 9452 Folio 110	CA 7125
CTVol 2608 Folio 169	Conv Book 3584 No. 592
****	Conv Book 3501 No. 311
	Conv Book 3443 No. 42
	Conv Book 3157 No. 687
	Conv Book 1820 No. 974
	Conv Book 1765 No's 628 & 629

(bi)	**(bii)**
Conv Book 1123 No. 795	Conv Book 1167 No. 348
****	****

Summary of proprietor(s)
Lot 310 DP 1034974

Year	Proprietor(s)
	(**Lot 310 DP 1034974)**
2001 – todate	Richard Karl Hvirf
	(Lot 31 DP 776491)
2001 – 2001	Richard Karl Hvirf
1988 – 2001	Julie Annette Hvir Richard Karl Hvirf
	(Lot 3 DP 717107)
1985 – 1988	Julie Annette Hvirf Richard Karl Hvirf

See Notes (a) & (b)

Note (a)

	(Lot 2 DP 503317 – CTVol 9452 Fol 110)
1984 – 1985	Julie Annette Hvirf, wife Richard Karl Hvirf, fitter
1982 – 1984	Abturka Pty Limited
1981 – 1982	Alumax of Australia Pty. Limited.
1974 – 1981	Jones Nominees Pty. Limited.
1963 – 1974	Christian Knife, farmer
	(Lots 22, 24, 28 & 29 of the Windermere Estate – Area 166 Acres 1 Rood 15 Perches – CTVol 2608 Fol 169)
1937 – 1963	Christian Knife, farmer
1937 – 1937	George Joseph Knife, farmer
1916 – 1937	George Knife, farmer
1915 – 1916	Ernest Winder, farmer

****

Note (b)

	(Lot 23 & Part Lot 27 DP 976397 – Conv Bk 3584 No. 592)
1983 – 1985	Julie Annette Hvirf, fitter Richard Karl Hvirf, wife
	(Lot 23 & Part Lot 27 DP 976397 – Conv Bk 3501 No. 311)
1981 – 1983	Abturka Pty Limited
	(Lot 23 & Part Lot 27 of Melville Estate – Area 24 Acres 3 Roods 33 Perches and other land – Conv Bk 3443 No. 42)
1980 – 1981	Alumax of Australia Pty. Limited
	(Lot 23 & Part Lot 27 of Melville Estate – Area 24 Acres 3 Roods 33 Perches and other land – Conv Bk 3157 No. 687)
1974 – 1980	Jones Nominees Pty. Limited (In Liquidation)
	(Lot 23 & Part Lot 27 of Melville Estate – Area 24 Acres 3 Roods 33 Perches and other land – Conv Bk 1820 No. 974)
1938 – 1974	Christian Knife, farmer
	(Lot 23 & Lot 27 of Melville Estate – Area 24 Acres 3 Roods 33 Perches and other land – Conv Bk 1765 No's 628 & 629)
1936 – 1938	Patrick Joseph McMahon, farmer,

See Notes (bi) & (bii)

Note (bi)

	(Allotment 27 of Melville Estate – Area 49 Acres 1 Rood 16 Perches and other land – Conv Bk 1123 No.795)
1918 - 1936	John Thomas Keys, hotelkeeper

****

Note (bii)

	(Allotment 23 of Melville Estate – Area 24 Acres 3 Roods 33 Perches and other land – Conv Bk 1167 No. 348)
1919 – 1936	James Morris, old age pensioner William Morris, retired farmer Thomas Morris, retired farmer Ethel Eleanor Badcock, wife of George Badcock, miner George Badcock, miner Joseph Morris, checkweighman William James Morris, wagon packer

****

Note 3:

Current Search

Folio Identifier 311/1135580 (title attached)
DP 1135580 (plan attached)
Dated 09th March, 2017
Registered Proprietor:
EDWIN JAMES AIRD JUNIOR

Title Tree
Lot 311 DP 1135580

Folio Identifier 311/1135580

Folio Identifier 31/1132263

Folio Identifier 311/1034974

See Notes (a) & (b)

(a)

Folio Identifier 2/746278

(ai)	**(aii)**
CTVol 9452 Folio 109	CA 18539
CTVol 2608 Folio 169	Conv Bk 3560 No 683
****	Conv Bk 3501 No 311
	Conv Bk 3478 No 430
	Conv Bk 1400 No 627
	Ackn Bk 1397 No 651
	****

(b)

Folio Identifier 31/776491

Folio Identifier 3/717107

(bi)	**(bii)**
CA 7125	CTVol 9452 Folio 110
Conv Book 3584 No. 592	CTVol 2608 Folio 169
Conv Book 3501 No. 311	****
Conv Book 3443 No. 42	
Conv Book 3157 No. 687	
Conv Book 1820 No. 974	
Conv Book 1765 No.s 628 & 629	

(bia)	**(bib)**
Conv Book 1123 No. 795	Conv Book 1167 No. 348
****	****

Summary of proprietor(s)
Lot 311 DP 1135580

Year	Proprietor
	(Lot 311 DP 1135580)
2009 – todate	Edwin James Aird Junior
	(Lot 31 DP 1132263)
2009 – 2009	Edwin James Aird Junior
	(**Lot 311 DP 1034974)**
2002 – 2009	Edwin James Aird Junior
2001 – 2002	Richard Karl Hvirf Edwin James Aird Junior

See Notes (a) & (b)

Note (a)

	(Lot 2 DP 746278)
1987 – 2001	Edwin James Aird Junior

See Notes (ai) & (aii)

Note (ai)

	(Lot 1 DP 503317 – CTVol 9452 Fol 109)
1983 – 1987	Edwin James Aird Junior
1982 – 1983	Abturka Pty Limited
1980 – 1982	Alumax of Australia Pty. Limited.
1968 – 1980	John Albert Wilkes, cartage contractor Ruth Marie Wilkes, wife
1963 – 1968	Stanley Thomas Wootton, gentleman
1963 – 1963	Christian Knife, farmer
	(Lots 22, 24, 28 & 29 of the Melville Estate – Area 166 Acres 1 Rood 15 Perches – CTVol 2608 Fol 169)
1937 – 1963	Christian Knife, farmer
1937 – 1937	George Joseph Knife, farmer
1916 – 1937	George Knife, farmer
1915 – 1916	Ernest Winder, farmer

****

Note (aii)

	(Lots 25 & 30 of Melville Estate and other lands – Conv Bk 3560 No 683)
1983 – 1987	Edwin James Aird, junior, company director
	(Lots 25 & 30 of Melville Estate and other lands – Conv Bk 3501 No 311)
1982 – 1983	Abturka Pty Limited
	(Lots 22 to 27 of Melville Estate and other lands – Conv Bk 3478 No 430)
1981 – 1982	Alumax of Australia Pty Limited
1980 – 1981	Francis Joseph Heagney, company secretary / executor Francis Bertrand Heagney, estate
	(Lots 22 to 27 of Melville Estate and other lands – Conv Bk 1400 No 627)
1925 – 1980	Francis Bertrand Heagney, farmer
	(Lots 22 to 27 of Melville Estate and other lands – Ackn Bk 1397 No 651)
1925 – 1925	Francis Heagney, farmer
1925 – 1925	Francis Heagney, farmer / executor Patrick Heagney, estate
1883 – 1925	Francis Heagney, farmer / executor Patrick Heagney, farmer / executor Michael Connolly, farmer / executor Patrick Markham, estate

****

Note (b)

	(Lot 31 DP 776491)
2001 – 2001	Richard Karl Hvirf
1988 – 2001	Julie Annette Hvir Richard Karl Hvirf
	(Lot 3 DP 717107)
1985 – 1988	Julie Annette Hvirf Richard Karl Hvirf

See Notes (bi) & (bii)

Note (bi)

	(Lot 2 DP 503317 – CTVol 9452 Fol 110)
1984 – 1985	Julie Annette Hvirf, wife Richard Karl Hvirf, fitter
1982 – 1984	Abturka Pty Limited
1981 – 1982	Alumax of Australia Pty. Limited.
1974 – 1981	Jones Nominees Pty. Limited.
1963 – 1974	Christian Knife, farmer
	(Lots 22, 24, 28 & 29 of the Melville Estate – Area 166 Acres 1 Rood 15 Perches – CTVol 2608 Fol 169)
1937 – 1963	Christian Knife, farmer
1937 – 1937	George Joseph Knife, farmer
1916 – 1937	George Knife, farmer
1915 – 1916	Ernest Winder, farmer

****

Note (bii)

	(Lot 23 & Part Lot 27 DP 976397 – Conv Bk 3584 No. 592)
1983 – 1985	Julie Annette Hvirf, fitter Richard Karl Hvirf, wife
	(Lot 23 & Part Lot 27 DP 976397 – Conv Bk 3501 No. 311)
1981 – 1983	Abturka Pty Limited
	(Lot 23 & Part Lot 27 of the Melville Estate – Area 24 Acres 3 Roods 33 Perches – Conv Bk 3443 No. 42)
1980 – 1981	Alumax of Australia Pty. Limited
	(Lot 23 & Part Lot 27 of the Melville Estate – Area 24 Acres 3 Roods 33 Perches– Conv Bk 3157 No. 687)
1974 – 1980	Jones Nominees Pty. Limited (In Liquidation)
	(Lot 23 & Part Lot 27 of the Melville Estate – Area 24 Acres 3 Roods 33 Perches – Conv Bk 1820 No. 974)
1938 – 1974	Christian Knife, farmer
	(Lot 23 & Lot 27 of the Melville Estate – Area 24 Acres 3 Roods 33 Perches – Conv Bk 1765 No's 628 & 629)
1936 – 1938	Patrick Joseph McMahon, farmer,

See Notes (biia) & (bib)

Note (biia)

	(Allotment 27 of the Melville Estate – Area 49 Acres 1 Rood 16 Perches– Conv Bk 1123 No.795)
1918 – 1936	John Thomas Keys, hotelkeeper

****

Note (biib)

	(Allotment 23 of the Melville Estate – Area 24 Acres 3 Roods 33 Perches – Conv Bk 1167 No. 348)
1919 – 1936	James Morris, old age pensioner William Morris, retired farmer Thomas Morris, retired farmer Ethel Eleanor Badcock, wife of George Badcock, miner George Badcock, miner Joseph Morris, checkweighman William James Morris, wagon packer

****

Land & Property Information

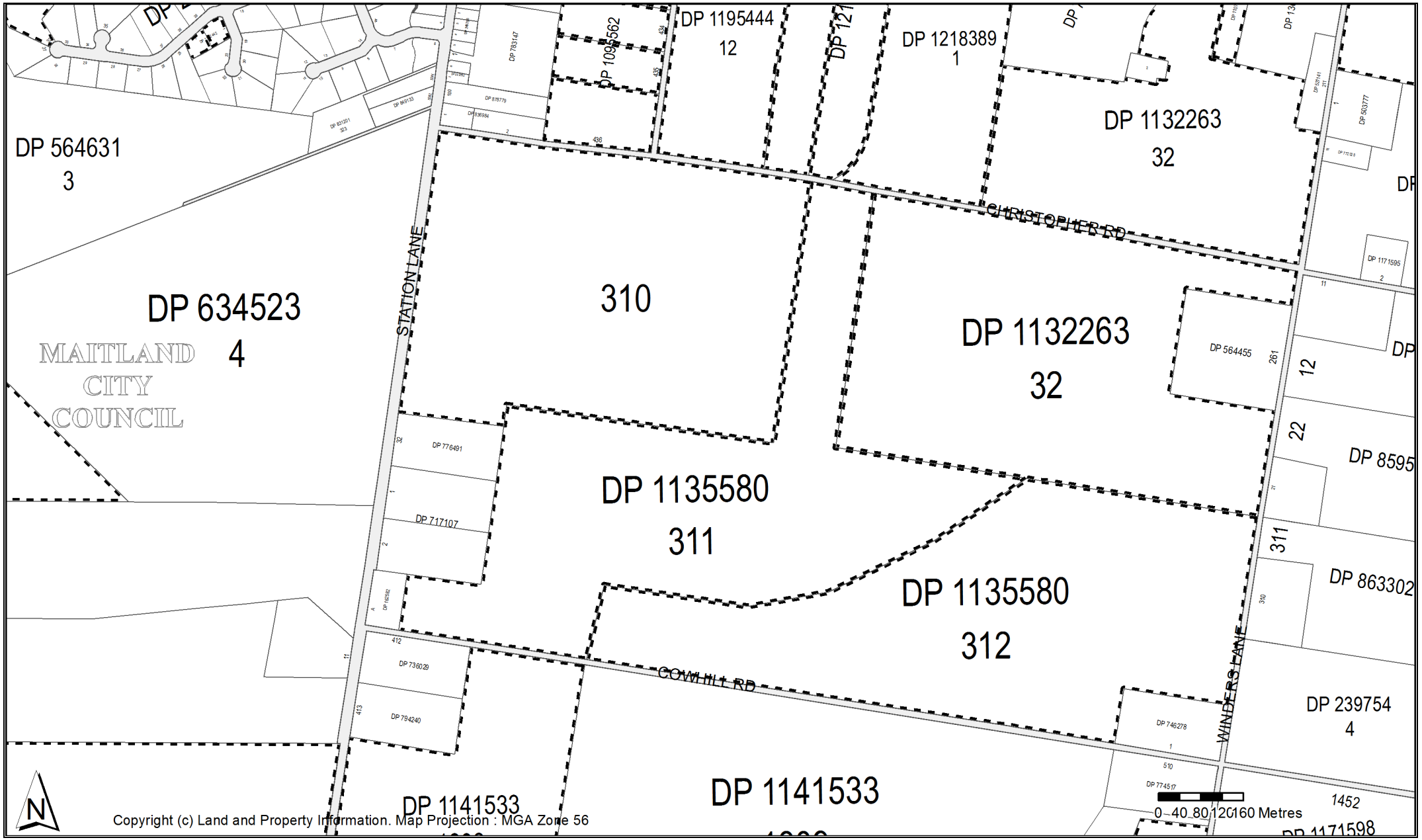
Cadastral Records Enquiry Report

Ref : Coffey - Lochinvar

Requested Parcel : Lot 311 DP 1135580

Identified Parcel : Lot 311 DP 1135580

Locality : LOCHINVAR **LGA :** MAITLAND **Parish :** GOSFORTH **County :** NORTHUMBERLAND



Report Generated 2:58:48 PM, 13 March, 2017

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.

	Status	Surv/Comp	Purpose
DP264380			
Lot(s): 32			
DP1227188	REGISTERED	SURVEY	EASEMENT
DP542920			
Lot(s): 141			
DP1171595	REGISTERED	SURVEY	RESUMPTION OR ACQUISITION
DP1034974			
Lot(s): 310			
DP776491	HISTORICAL	SURVEY	SUBDIVISION
DP1095562			
Lot(s): 434, 435, 436			
CA98403 - LOTS 433-436 DP1095562			
DP1107022			
Lot(s): 21			
CA103245 - LOT 21 DP1107022			
DP1132263			
Lot(s): 32			
DP718712	HISTORICAL	SURVEY	SUBDIVISION
DP746278	HISTORICAL	SURVEY	SUBDIVISION
DP776491	HISTORICAL	SURVEY	SUBDIVISION
DP1034974	REGISTERED	SURVEY	SUBDIVISION
DP1135580			
Lot(s): 311, 312			
DP746278	HISTORICAL	SURVEY	SUBDIVISION
DP776491	HISTORICAL	SURVEY	SUBDIVISION
DP1034974	REGISTERED	SURVEY	SUBDIVISION
DP1132263	REGISTERED	SURVEY	SUBDIVISION
DP1141532			
Lot(s): 1205			
DP776055	HISTORICAL	SURVEY	CONSOLIDATION
DP1141533			
Lot(s): 1311			
DP808381	HISTORICAL	SURVEY	SUBDIVISION
Lot(s): 1308			
DP794240	HISTORICAL	SURVEY	SUBDIVISION
DP1142442			
Lot(s): 1, 2			
DP264380	HISTORICAL	SURVEY	SUBDIVISION
DP1195444			
Lot(s): 12			
DP161839	HISTORICAL	SURVEY	UNRESEARCHED
DP561399	HISTORICAL	COMPILATION	DEPARTMENTAL
DP1097563	REGISTERED	SURVEY	SUBDIVISION
DP1216128			
Lot(s): 102			
DP633208	HISTORICAL	SURVEY	OLD SYSTEM CONVERSION
DP634523	HISTORICAL	SURVEY	SUBDIVISION
DP997240	HISTORICAL	COMPILATION	DEPARTMENTAL
DP1093291	REGISTERED	SURVEY	SUBDIVISION
DP1111493	REGISTERED	SURVEY	SUBDIVISION
DP1132799	HISTORICAL	SURVEY	OLD SYSTEM CONVERSION
DP1177217	REGISTERED	COMPILATION	CONSOLIDATION
PA82590 - LOT 1 DP1132799			
DP1218389			
Lot(s): 1, 2, 3			
DP1124571	HISTORICAL	COMPILATION	LIMITED FOLIO CREATION
CA104021 - LOT 1819 DP1124571			

Caution: For all **ACTIVITY PRIOR to SEPT 2002** you must refer to the RGs Charting and Reference Maps.

Plan	Surv/Comp	Purpose
DP136186	COMPILATION	DEPARTMENTAL
DP162582	SURVEY	UNRESEARCHED
DP239754	SURVEY	SUBDIVISION
DP249750	SURVEY	SUBDIVISION
DP264380	SURVEY	SUBDIVISION
DP503777	SURVEY	SUBDIVISION
DP521141	SURVEY	SUBDIVISION
DP542920	SURVEY	SUBDIVISION
DP564455	SURVEY	SUBDIVISION
DP564631	SURVEY	SUBDIVISION
DP634523	SURVEY	SUBDIVISION
DP717107	SURVEY	SUBDIVISION
DP718712	SURVEY	SUBDIVISION
DP736029	SURVEY	SUBDIVISION
DP746278	SURVEY	SUBDIVISION
DP772028	SURVEY	SUBDIVISION
DP774517	SURVEY	SUBDIVISION
DP776491	SURVEY	SUBDIVISION
DP783147	COMPILATION	DEPARTMENTAL
DP794240	SURVEY	SUBDIVISION
DP831201	SURVEY	SUBDIVISION
DP836984	SURVEY	SUBDIVISION
DP849133	SURVEY	SUBDIVISION
DP854217	SURVEY	SUBDIVISION
DP859518	SURVEY	SUBDIVISION
DP862305	SURVEY	SUBDIVISION
DP863302	SURVEY	SUBDIVISION
DP878779	SURVEY	SUBDIVISION
DP1034974	SURVEY	SUBDIVISION
DP1095562	COMPILATION	LIMITED FOLIO CREATION
DP1107022	COMPILATION	LIMITED FOLIO CREATION
DP1132263	UNRESEARCHED	SUBDIVISION
DP1132263	SURVEY	SUBDIVISION
DP1135580	UNRESEARCHED	SUBDIVISION
DP1135580	SURVEY	SUBDIVISION
DP1141532	UNRESEARCHED	RESUMPTION OR ACQUISITION
DP1141532	SURVEY	RESUMPTION OR ACQUISITION
DP1141533	SURVEY	RESUMPTION OR ACQUISITION
DP1141533	UNRESEARCHED	RESUMPTION OR ACQUISITION
DP1142442	SURVEY	SUBDIVISION
DP1171595	SURVEY	RESUMPTION OR ACQUISITION
DP1171598	SURVEY	RESUMPTION OR ACQUISITION
DP1195444	SURVEY	SUBDIVISION
DP1216128	SURVEY	SUBDIVISION
DP1218389	COMPILATION	SUBDIVISION
DP1218389	COMPILATION	SUBDIVISION

[redacted]

M

NEW SOUTH WALES

(For Grant and title reference prior to first edition see Deposited Plan.)

[redacted]IFICATE OF TITLE

[redacted]PERTY ACT, 1900, as amended.

09452109

Vol. 9452 Fol. 109

CANCELLED W

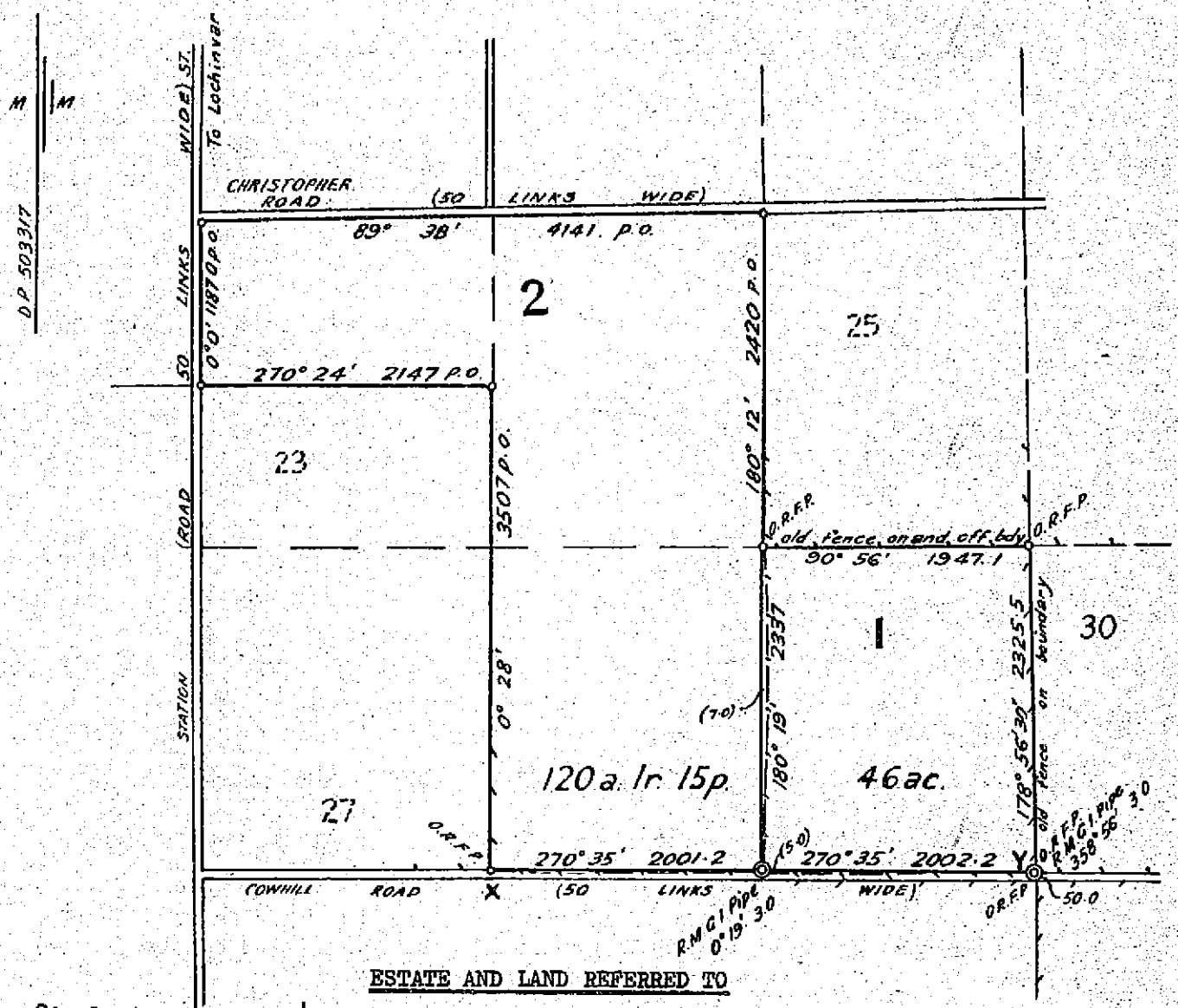
1st Edition issued 6-6-1963

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 B Bailey

Registrar-General.

PLAN SHOWING LOCATION OF LAND



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in lot 1 in Deposited Plan 503317 at Lochinvar in the City of Maitland Parish of Gosforth and County of Northumberland.

FIRST SCHEDULE (Continued overleaf)

~~CHRISTIAN KNIPE of Lochinvar, Farmer.~~

Registrar General

SECOND SCHEDULE (Continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant(s) referred to in the said Deposited Plan.

Registrar General

ST 1608 V. C. N. BLIGHT, GOVERNMENT PRINTER

Vol. 0152 Fol. 109

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar-General
~~Stanley Thomas Alcott of Treadwell House, Epsom, Surrey, England, Gentleman~~ John Albert Wilkes of Narromine Cartage Contractor and Ruth Mary Wilkes his wife as tenants in common in equal shares	Transfer	L397984	5-7-1963	6-8-1963	
	Transfer	L160661	14-8-1968	6-9-1968.	
~~Alumax of Australia Pty. Limited~~ Alcoa of Australia Pty. Limited by Transfer S36570	Transfer	S36570	—	12-9-1980	
Edwin James Aird Junior by Transfer T765153. Registered 5-10-1983					

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION		
Mortgage	L160662	19-8-1968	to Bank of New South Wales	6-9-1968		Discharged	R96240	
Mortgage	N317986	2.2.1973	~~to Bank of New South Wales Savings Bank Limited.~~	~~11.7.1973~~		Discharged	P851843	
Caveat	R639737	—	~~by Alumax of Australia Pty. Limited~~	4-2-1980		Withdrawn	S36569	
T765154 Mortgage to Australia and New Zealand Banking Group Limited Registered 5-10-1983						Discharged	W810471	
			DP 1st 746278 Registered 2-4-1987 This folio is cancelled as to whole/~~part~~ upon creation of computer folios for lots 2 in the abovementioned plan.					

(Page 2 of 2 pages)

FORM No. 184A NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED

[redacted]

M

NEW SOUTH WALES

(For Grant and title reference prior to first edition see Deposited Plan.)

[redacted]TIFICATE OF TITLE

[redacted]PERTY ACT, 1900, as amended.

09452110

Vol. 9452 Fol. 110

CANCELLED W

1st Edition issued 6-6-1963

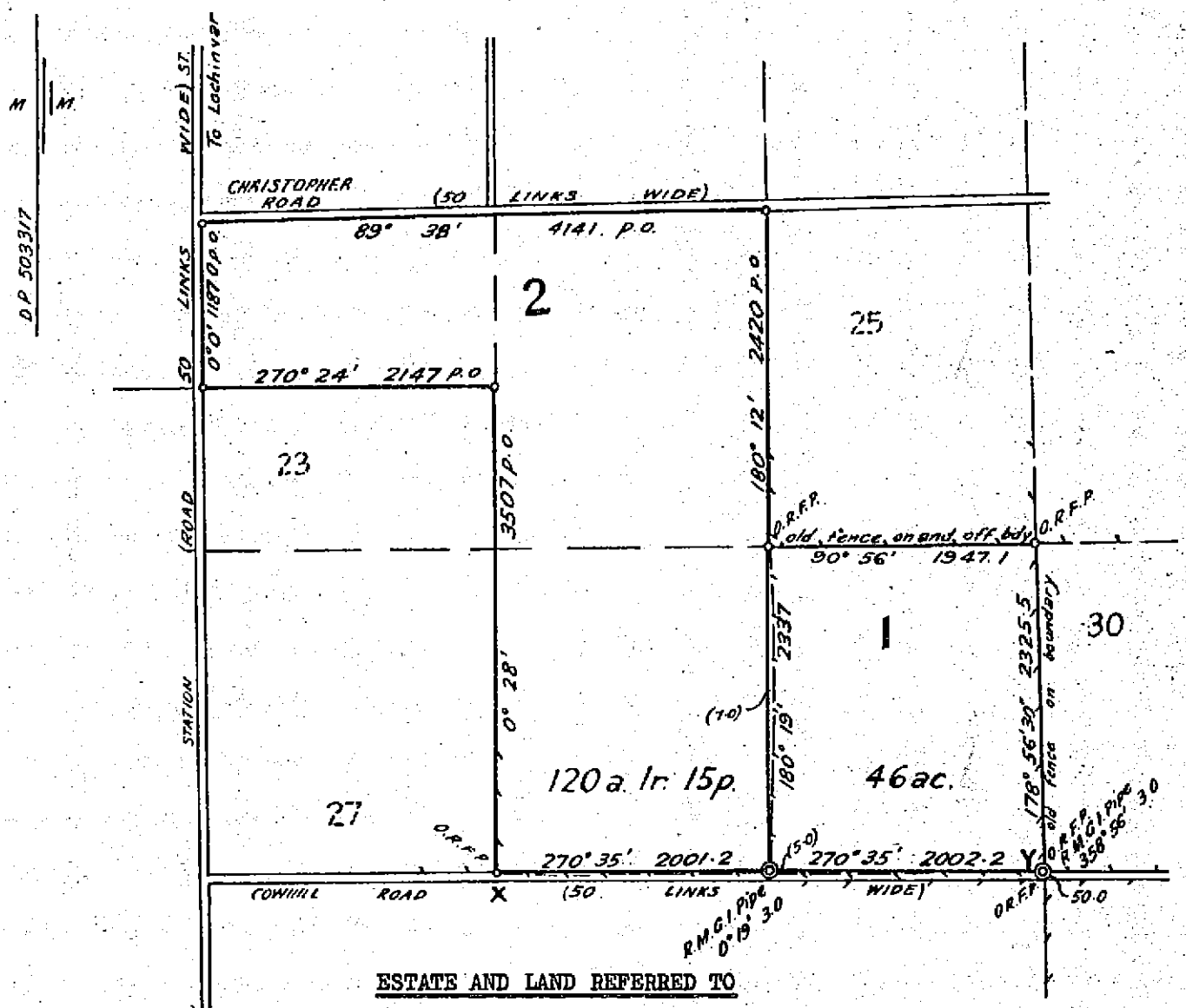
(Page 1) Vol. 9452 Fol. 110

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 B Bailey

Registrar-General.

PLAN SHOWING LOCATION OF LAND



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in lot 2 in Deposited Plan 503317 at Lochinvar in the City of Maitland Parish of Gosforth and County of Northumberland.

FIRST SCHEDULE (Continued overleaf)

~~CHRISTIAN KNIPS of Lochinvar, Farmer.~~

Registrar General

SECOND SCHEDULE (Continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant(s) referred to in the said Deposited Plan.

Registrar General

Vol. 9452 Fol 110

AT 1808 V. C. N. BLIGHT, GOVERNMENT PRINTER

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar-General
~~Jones Nominees Pty. Limited~~	~~Transfer~~	~~N915529~~	~~12-6-1974~~	~~14-8-1974~~	[signature]
~~Alumax of Australia Pty. Limited.~~	~~Transfer~~	~~S247283~~		~~30-1-1981~~	[signature]
~~Al[illegible] Pty Limited by Transfer S98660 Registered 30-3-1982~~					[signature]
Richard Karl Hvirf and Julie Annette Hvirf as joint tenants by Transfer V104860 Registered 22-5-1984					[signature]
DP 717107 Registered 26-9-1985 This folio is cancelled as to whole/~~part~~ upon creation of computer folios for lots 1 to 3 in the abovementioned plan. consolidation vide CA 7125					

N915529 — 30 [illegible]
S247282 — 3
S98660 TR
V104860 TR — [illegible]
CT 2/8/85
DP717107 Reg'd 26/9/85

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION		
~~Mortgage~~	~~N915530~~	~~12-6-1974~~	~~to Christian Knipe of Lochinvar, Farmer~~	~~14-8-1974~~	[signature]	Discharged	S247282	[signature]
V104861 Mortgage to Westpac Savings Bank Limited Registered 22-5-1984					[signature]			

FORM No. 184A

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

Form: 97-011
Licence: MID/0734/97

TRANSFER

New South Wales
Real Property Act 1900

7845161J

Office of State Revenue use only

NEW SOUTH WALES DUTY
29-06-2001 0000664015-001
TRANSFER- COURT ORDER
DUTIABLE AMOUNT $ **************2.00
DUTY $ **************2.00
TRANSFER STAMPED

(A) **LAND TRANSFERRED**
If appropriate, specify the share or part transferred.

FOLIO IDENTIFIER 31/776491

(B) **LODGED BY**

LTO Box	Name, Address or DX and Telephone
25G	THE MORTGAGE COMPANY Reference (15 character max):

(C) **TRANSFEROR** **JULIE ANNETTE HVIRF**

(D) acknowledges Orders made on July 2001 in the Family Court of Australia at Newcastle in suit number 1123 of 2000 and as regards the land specified above transfers to the transferee an estate in fee simple.

(E) Encumbrances (if applicable): 1. Nil 2. 3.

(F) **TRANSFEREE**

T **TS** (s713 LGA) **TW** (Sheriff)	RICHARD KARL HVIRF

S

(G)

(H) We certify this dealing correct for the purposes of the Real Property Act 1900. **DATE** 9 JULY 2001

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

Maya Warne
Signature of Witness

Maya Warne
Name of Witness (BLOCK LETTERS)

C/- 42 King St. Newcastle NSW
Address of Witness

J. A. Hvirf
Signature of Transferor

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

MMcNeil
Signature of Witness

MICHELLE MCNEIL
Name of Witness (BLOCK LETTERS)

24 Church Street, Newcastle.
Address of Witness

R K Hvirf
Signature of Transferee

Checked by (LTO use) ...
OFF Q41

Form: 01T
Licence: 10V/0096/96
Edition: 0011

TRANSFER

New South Wales
Real Property Act 1900

8361278H

PRIVACY NOTE: this information is legally required and will be

STAMP DUTY

OFFICE OF STATE REVENUE (N.S.W.)
Office of State Revenue use only
CLIENT No. 1405679 STAMP No. 481
STAMP DUTY $2.00 SIGNATURE D J McKenzie
TRANSACTION No 011701 DATE 20-11-01
ASSESSMENT DETAILS:

(A) **TORRENS TITLE**

If appropriate, specify the part transferred

FOLIO IDENTIFIER ~~311/103974~~ 311/1034974

OFFICE OF STATE REVENUE (N.S.W. TREASURY) 1405679 481 ALTERATION NOTED

(B) **LODGED BY**

Delivery Box	Name, Address or DX and Telephone	CODES
28A	28A GALLOWAY & CO. Phone: (02) 9233 1011 Fax: (02) 9232 6491 DX 340, SYDNEY L.T.O. Delivery 28A Reference (optional): THOMP- AIRD	T TW (Sheriff)

(C) **TRANSFEROR**

OFFICE OF STATE REVENUE (N.S.W. TREASURY) 1405679 481 ALTERATION NOTED

~~EDWIN JAMES AIRD JUNIOR AND~~ RICHARD KARL HVIRF

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ 331,830.00 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): 1. NIL 2. ..... 3. .....

(H) **TRANSFEREE**

EDWIN JAMES AIRD, JUNIOR ~~AND CAROL ANN AIRD~~

OFFICE OF STATE REVENUE (N.S.W. TREASURY) 1405679 481 ALTERATION NOTED

(I) **TENANCY:** ~~TENANTS IN COMMON IN EQUAL SHARES~~

OFFICE OF STATE REVENUE (N.S.W. TREASURY) 1405679 481 ALTERATION NOTED

DATE 20 / 11 / 01
dd mm yyyy

(J) I certify that the transferor, with whom I am personally acquainted or as to whose identity I am otherwise satisfied, signed this transfer in my presence.

Signature of witness:

Name of witness: S. D. CANT

Address of witness: Grosvenor Hills

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

Signature of transferor:

I certify that the transferee, with whom I am personally acquainted or as to whose identity I am otherwise satisfied, signed this transfer 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 transferee.

Signature of transferee:

Solicitor for Transferee
BRETT LINDSAY WIGGINS
If signed on the transferee's behalf by a solicitor or licensed conveyancer, insert the signatory's full name and capacity below:

All handwriting must be in block capitals.

A set of notes on this form (01T-2) is available from Land and Property Information NSW.

Form: 03AE
Licence: 01-05-051
Licensee: LEAP Legal Software Pty Limited
Firm name: Wiggins Cheffings Lawyers

TRANSMISSION APPLICATION

by an Executor, Administrator or Trustee

New South Wales
Section 93 Real Property Act 1900

AJ43555H

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.

30/12/2014

(A) **TORRENS TITLE** — Folio Identifier ~~32/1132263~~ 2/718712

BRETT FIELDING BY AUTHORISED AGENT TO AMEND

(B) **REGISTERED DEALING**

NUMBER	TORRENS TITLE

(C) **LODGED BY**

DOCUMENT COLLECTION BOX	NAME, ADDRESS OR DX, TELEPHONE, AND CUSTOMER ACCOUNT NUMBER IF ANY	CODE
BOX 30P	L J KANE & CO LLPN 123818G REFERENCE: WC -AIRD	AE

(D) **DECEASED REGISTERED PROPRIETOR** — EDWIN JAMES AIRD

(E) **APPLICANT** — EDWIN JAMES AIRD & MERRAN POWER

(F) The abovementioned applicant, being entitled as executor of the will of the deceased registered proprietor (who died on 10 February 2014) pursuant to Probate No. 2014/88190 granted on 19 May 2014 to Edwin James Aird and Merran Power (a certified copy of which is lodged herewith) hereby applies to be registered as proprietor of the estate or interest of the deceased registered proprietor in the abovementioned land

DATE

(G)

RELODGED
30 DEC 2014
TIME: 1.30

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

Signature:

Signatory's name: Brett Lindsay Wiggins
Signatory's capacity: Solicitor

(H) *This section is to be completed where a notice of sale is required and the relevant data has been forwarded through eNOS.*
The applicant's solicitor certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. 67942 Full name: Brett Lindsay Wiggins Signature:

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

ALL HANDWRITING MUST BE IN BLOCK CAPITALS.

Evidence sighted and returned (office use only):

PLAN FORM 2

Plan Drawing only to appear in this space

*OFFICE USE ONLY

Signatures and seals only.

AIRDS

PETER JAMES BROMILOW

VICTORIA ANN GREEN

JUSTICE OF THE PEACE

Edwin J. Aird

Council Clerk's Certificate

I hereby certify that –

(a) the requirements of the Local Government Act, 1919 (other than the requirements for the registration of plans), and

*(b) the requirements of section 34R of the †Metropolitan Water, Sewerage and Drainage Act, 1924, as amended. †Hunter District Water, Sewerage, and Drainage Act, 1938, as amended

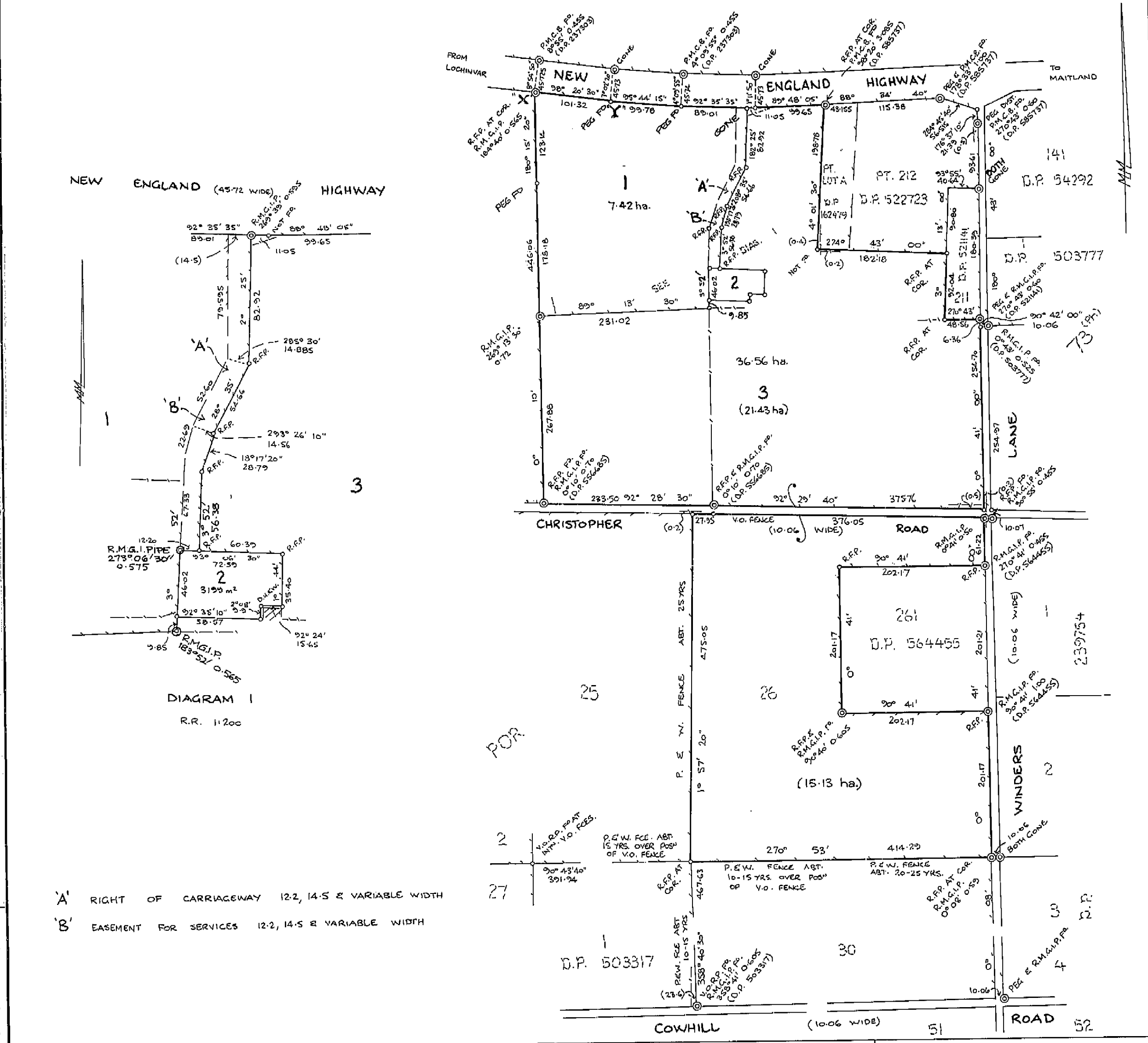
have been complied with by the applicant in relation to the proposed "subdivision" (insert "new road", "subdivision" or "consolidated lot") set out herein

Subdivision No. 133|5|83046

Date 19th December, 1984

(Signature) Council Clerk

*This part of certificate to be deleted where the application is only for a consolidated lot or the opening of a new road or where the land to be subdivided is wholly outside the areas of operations of the Metropolitan Water Sewerage and Drainage Board and the Hunter District Water Board.
†Delete if inapplicable.



D.P. 718712

Y003A1E

Registered: as 10·12·1985

C.A.: 133/5/83046 of 19·12·1984

Title System: TORRENS AND OLD SYSTEM

Purpose: SUBDIVISION

Ref. Map: U3680-9#
MAITLAND SH 12#

Last Plan: D.P.556685

PLAN OF SUBDIVISION OF PART OF LAND IN CONV. No. 9 BK. 2954 + LOT 1 D.P. 556685

Reduction Ratio 1: 4000
Lengths are in metres.

Mun./Shire/City MAITLAND

Locality: LOCHINVAR

Parish: GOSFORTH

County: NORTHUMBERLAND

~~This is sheet 1 of my plan in ——— sheets.~~
(Delete if inapplicable).

I, RAYMOND PAUL DILLEY of SCOTT, CRISP, CASIMERE & PARTNERS PTY. LTD 13 CHURCH STREET MAITLAND a surveyor registered under the Surveyors Act, 1929, as amended, hereby certify that the 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 † 13th December 1984.

Signature

Surveyor registered under Surveyors Act, 1929, as amended.
Datum Line of Azimuth X–Y
*Strike out either (1) or (2). †Insert date of survey.

Panel for use only for statements of intention to dedicate public roads or to create public reserves, drainage reserves, easements or restrictions as to user.

PURSUANT TO SEC. 88B. OF THE CONVEYANCING ACT 1919-64 IT IS INTENDED TO CREATE:-

1. RIGHT OF CARRIAGEWAY 12·2, 14·5 & VAR. WIDTH
2. EASEMENT FOR SERVICES 12·2, 14·5 & VAR. WIDTH

Table of mm

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

SURVEYOR'S REFERENCE (50800) GR3

This negative is a photograph made as a permanent record of a document in the custody of the Registrar General this day. 11th December, 1985

PLAN FORM 2

Plan Drawing only to appear in this space

SIGNATURE AND SEALS ONLY.

DIRECTOR

Secretary

MAITLAND MUTUAL BUILDING SOCIETY LIMITED A.C.N. 087 651 983 Common Seal

Signed for and on behalf of
WESTPAC BANKING CORPORATION
ABN 33 007 457 141
by its Attorney: Scott Benjamin Cain CONSENTS TO RECORDING

Power of Attorney registered at Land and Property Information NSW Book 4299 No. 332

I certify that the applicant, with whom I am personally acquainted or as to whose identity I am otherwise satisfied, signed this application in my presence.

Signature of Witness:
Name of Witness: Petre Stefan Iliescu
Address of Witness: 25 Pierson Street Lockleys SA 5032
Daytime telephone number of Witness: 08 82904974

Crown Lands Office Approval

PLAN APPROVED ..... Authorised Officer

Land District .....

Paper No. .....

Field Book ..... pages .....

Subdivison Certificate

I hereby certify that the provisions of s.109J of the Environmental Planning and Assessment Act 1979 have been satisfied in relation to the proposed

Boundary Adjustment set out herein
* (Insert "subdivision" or "new road")

* Authorised Person/General Manager/Accredited Certifier

Consent Authority: Maitland City Council

Date of endorsement: 3 September 2001

Accreditation no: .....

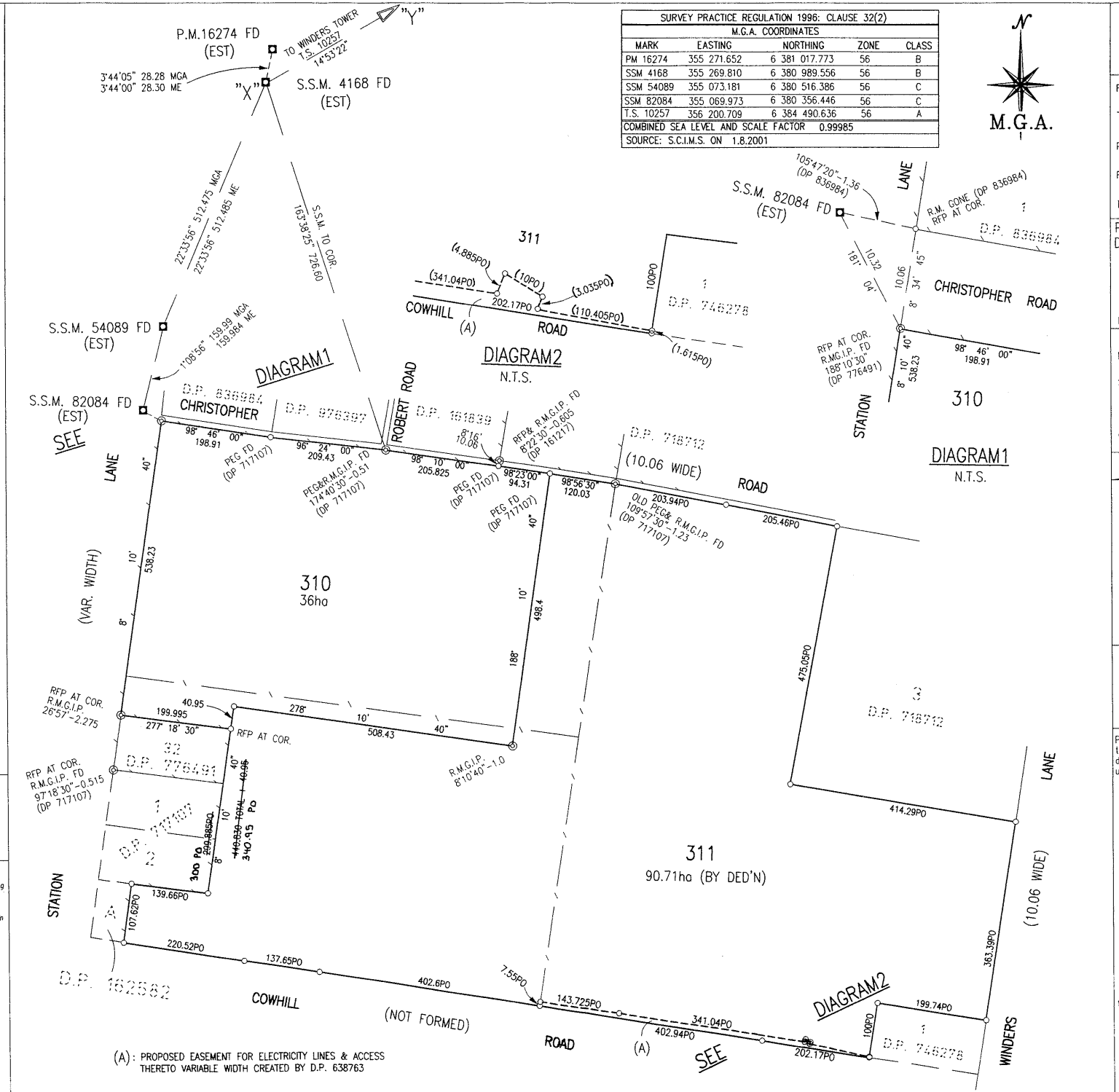
Subdivision Certificate no: 011209

File no: LD 011209

Note:
When the plan is to be lodged electronically in the land Titles Office it should include a signature in an electronic or digital format approved by the Registrar-General.

* Delete whichever is inapplicable

SURVEY PRACTICE REGULATION 1996: CLAUSE 32(2)				
M.G.A. COORDINATES				
MARK	EASTING	NORTHING	ZONE	CLASS
PM 16274	355 271.652	6 381 017.773	56	B
SSM 4168	355 269.810	6 380 989.556	56	B
SSM 54089	355 073.181	6 380 516.386	56	C
SSM 82084	355 069.973	6 380 356.446	56	C
T.S. 10257	356 200.709	6 384 490.636	56	A
COMBINED SEA LEVEL AND SCALE FACTOR 0.99985				
SOURCE: S.C.I.M.S. ON 1.8.2001				



(A): PROPOSED EASEMENT FOR ELECTRICITY LINES & ACCESS THERETO VARIABLE WIDTH CREATED BY D.P. 638763

DP1034974

Registered: 2-11-2001

Title System: TORRENS

Purpose: SUBDIVISION

Ref. Map: MAITLAND SH 12

Last Plan: DP746278 DP776491

PLAN OF SUBDIVISION OF LOT 31 D.P. 776491 & LOT 2 D.P. 746278

Lengths are in metres. Reduction Ratio 1: 5000

L G A: MAITLAND

Suburb/Locality: LOCHINVAR

Parish: GOSFORTH

County: NORTHUMBERLAND

This is sheet 1 of my plan in sheets. (Delete if inapplicable)

Surveyors (Practice) Regulation 1996
I, RAYMOND PAUL DILLEY
of SCOTT CRISP PO BOX 2127 GREENHILLS 2323

a surveyor registered under the Surveyors Act, 1929, hereby certify that the survey represented in this plan is accurate, has been made in accordance with the Surveyors (Practice) Regulation 1996 and was completed on 6.8.2001

The survey relates to LOT 310 ONLY, LOT 311 COMPILED (here specify the land actually surveyed, or specify any land shown in the plan that is not the subject of the survey)

Datum Line: "X"-"Y"
Zone: Suburban/Country

(Signature) Surveyor registered under the surveyors Act 1929

Plans used in preparation of survey/compilation.

D.P. 776491	D.P. 161217
D.P. 836984	D.P. 746278
D.P. 638763	D.P. 718712
D.P. 717107	

PANEL FOR USE ONLY for statements of intention to dedicate public roads, to create public reserves, drainage reserves, easements, restrictions on the use of land or positive covenants.

PLAN AMENDED IN LPI (NSW) AT SURVEYORS REQUEST 2-11-2001

*OFFICE USE ONLY

9132-1-S

SURVEYOR'S REFERENCE: 3419 GF/3 (066)

MPR- PERMANENT

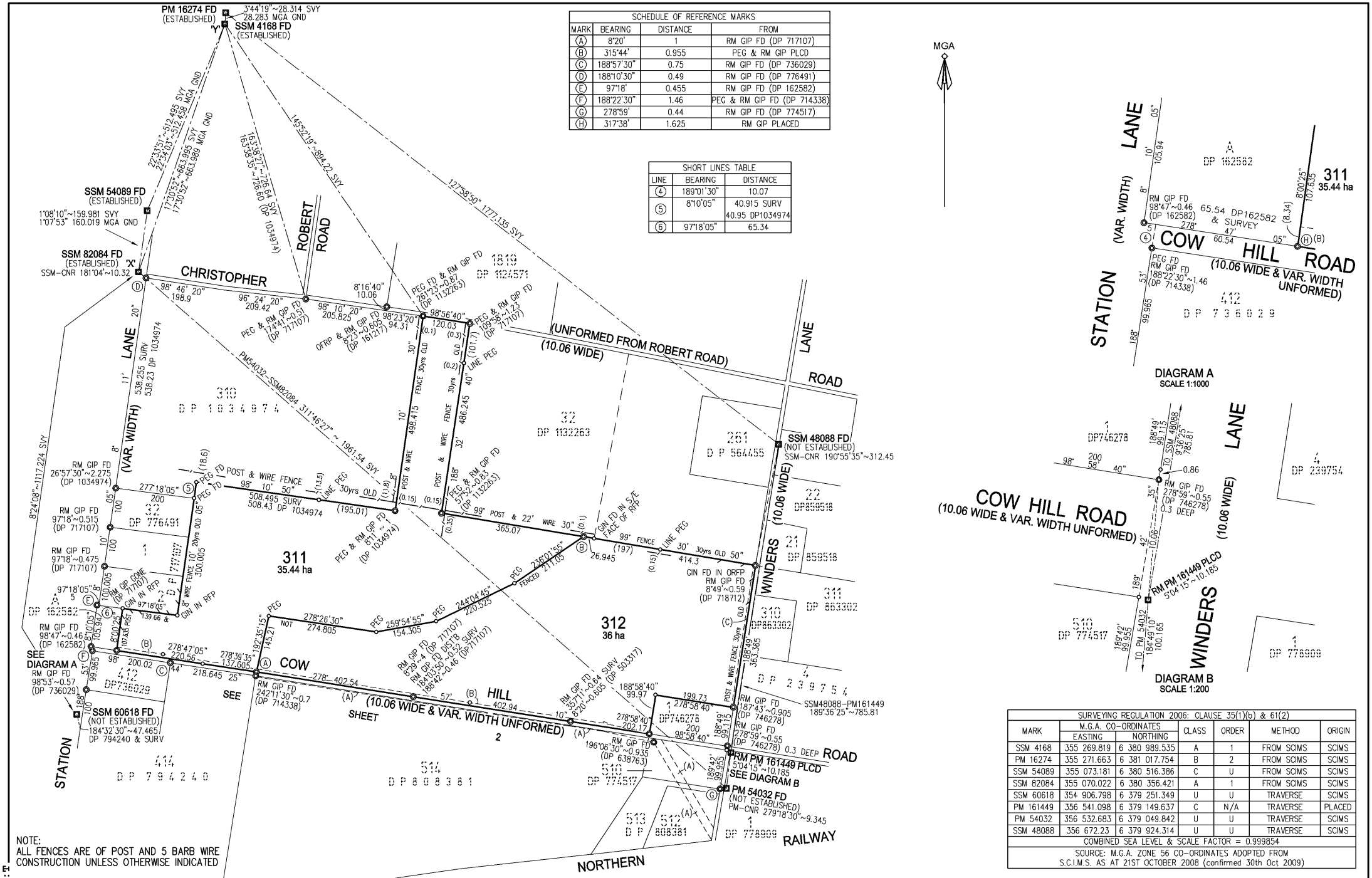
WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

PLAN FORM 2

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

ePlan

Sheet 1 of 2 Sheets



SCHEDULE OF REFERENCE MARKS			
MARK	BEARING	DISTANCE	FROM
(A)	8°20'	1	RM GIP FD (DP 717107)
(B)	315°44'	0.955	PEG & RM GIP PLCD
(C)	188°57'30"	0.75	RM GIP FD (DP 736029)
(D)	188°10'30"	0.49	RM GIP FD (DP 776491)
(E)	97°18'	0.455	RM GIP FD (DP 162582)
(F)	188°22'30"	1.46	PEG & RM GIP FD (DP 714338)
(G)	278°59'	0.44	RM GIP FD (DP 774517)
(H)	317°38'	1.625	RM GIP PLACED

SHORT LINES TABLE		
LINE	BEARING	DISTANCE
(4)	189°01'30"	10.07
(5)	8°10'05"	40.915 SURV 40.95 DP1034974
(6)	97°18'05"	65.34

SURVEYING REGULATION 2006: CLAUSE 35(1)(b) & 61(2)						
MARK	M.G.A. CO-ORDINATES		CLASS	ORDER	METHOD	ORIGIN
	EASTING	NORTHING				
SSM 4168	355 269.819	6 380 989.535	A	1	FROM SCIMS	SCIMS
PM 16274	355 271.663	6 381 017.754	B	2	FROM SCIMS	SCIMS
SSM 54089	355 073.181	6 380 516.386	C	U	FROM SCIMS	SCIMS
SSM 82084	355 070.022	6 380 356.421	A	1	FROM SCIMS	SCIMS
SSM 60618	354 906.798	6 379 251.349	U	U	TRAVERSE	SCIMS
PM 161449	356 541.098	6 379 149.637	C	N/A	TRAVERSE	PLACED
PM 54032	356 532.683	6 379 049.842	U	U	TRAVERSE	SCIMS
SSM 48088	356 672.23	6 379 924.314	U	U	TRAVERSE	SCIMS
COMBINED SEA LEVEL & SCALE FACTOR = 0.999854						
SOURCE: M.G.A. ZONE 56 CO-ORDINATES ADOPTED FROM S.C.I.M.S. AS AT 21ST OCTOBER 2008 (confirmed 30th Oct 2009)						

NOTE:
ALL FENCES ARE OF POST AND 5 BARB WIRE CONSTRUCTION UNLESS OTHERWISE INDICATED

(A) EASEMENT FOR TRANSMISSION LINE AND ACCESS 20 WIDE AND VARIABLE (VIDE Y19304)
(B) EASEMENT FOR ELECTRICITY AND OTHER PURPOSES (VARIABLE WIDTH)
(C) EASEMENT FOR ELECTRICITY AND OTHER PURPOSES 5 WIDE

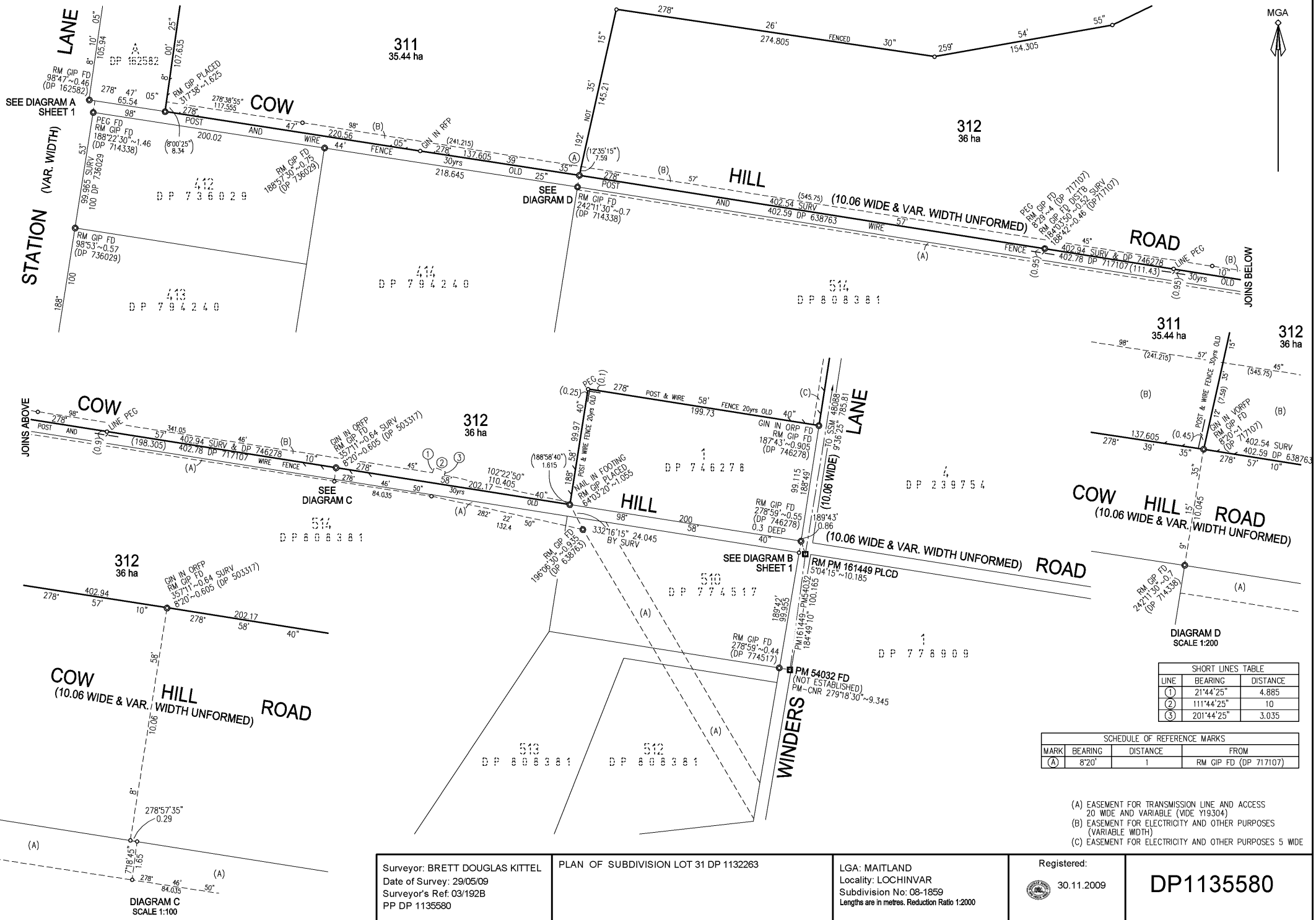
Surveyor: BRETT DOUGLAS KITTEL
Date of Survey: 29/05/09
Surveyor's Ref: 03/192B
PP DP 1135580

PLAN OF SUBDIVISION LOT 31 DP 1132263

LGA: MAITLAND
Locality: LOCHINVAR
Subdivision No: 08-1859
Lengths are in metres. Reduction Ratio 1:6000

Registered:
30.11.2009

DP1135580



SHORT LINES TABLE		
LINE	BEARING	DISTANCE
(1)	21°44'25"	4.885
(2)	111°44'25"	10
(3)	201°44'25"	3.035

SCHEDULE OF REFERENCE MARKS			
MARK	BEARING	DISTANCE	FROM
(A)	8°20'	1	RM GIP FD (DP 717107)

(A) EASEMENT FOR TRANSMISSION LINE AND ACCESS 20 WIDE AND VARIABLE (WIDE Y19304)
(B) EASEMENT FOR ELECTRICITY AND OTHER PURPOSES (VARIABLE WIDTH)
(C) EASEMENT FOR ELECTRICITY AND OTHER PURPOSES 5 WIDE

Surveyor: BRETT DOUGLAS KITTEL Date of Survey: 29/05/09 Surveyor's Ref: 03/192B PP DP 1135580	PLAN OF SUBDIVISION LOT 31 DP 1132263	LGA: MAITLAND Locality: LOCHINVAR Subdivision No: 08-1859 Lengths are in metres. Reduction Ratio 1:2000	Registered: 30.11.2009	DP1135580

PLAN FORM 6 WARNING: Creasing or folding will lead to rejection ePlan

DEPOSITED PLAN ADMINISTRATION SHEET

Sheet 1 of 3 sheet(s)

* OFFICE USE ONLY

SIGNATURES, SEALS and STATEMENTS of intention to dedicate public roads, to create public reserves, drainage reserves, easements, restrictions on the use of land or positive covenants.

Pursuant to Section 88B of the Conveyancing Act 1919, as amended it is intended to create:

1. Easement for Electricity and other Purposes variable Width (B)
2. Easement for Electricity and other Purposes 5 wide (C)

.....
Edwin James Aird Junior

* DP1135580

Registered: 30.11.2009 *
Title System: TORRENS
Purpose: SUBDIVISION

PLAN OF SUBDIVISION OF LOT 31 DP1132263

LGA: Maitland
Locality: Lochinvar
Parish: Gosforth
County: Northumberland

Use PLAN FORM 6A
for additional certificates, signatures, seals and statements

Crown Lands NSW/Western Lands Office Approval

I.....in approving this plan certify
(Authorised Officer)
that all necessary approvals in regard to the allocation of the land shown herein have been given.

Signature:.....
Date:.....
File Number:.....
Office:.....

Subdivision Certificate

I certify that the provisions of s.109J of the Environmental Planning and Assessment Act 1979 have been satisfied in relation to:

the proposed....SUBDIVISION..... set out herein
(insert 'subdivision' or 'new road')

.....
* Authorised Person/~~General Manager/Accredited Certifier~~

Consent Authority: ..Maitland City Council.....
Date of Endorsement: 24.7.09.....
~~Accreditation no~~: .....
Subdivision Certificate no: ..08-1859.....
File no: DA08-1859.....

* Delete whichever is inapplicable.

Surveying Regulation, 2006

I, Brett Douglas Kittel - Pulver Cooper & Blackley.....
of 98 Lawes Street, East Maitland.2323.....
a surveyor registered under the *Surveying Act, 2002*, certify that the survey represented in this plan is accurate, has been made in accordance with the *Surveying Regulation, 2006* and was completed on:...29th May 2009.....

The survey relates to ..Lots 311 & 312.....
.....
.....
(specify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey)

Signature BRETT KITTEL *Dated:*
Surveyor registered under the Surveying Act, 2002

Datum Line: 'X' - 'Y'.....
Type: ~~Urban~~/Rural

Plans used in the preparation of survey/compilation

DP161217	DP718712	DP836984
DP162582	DP736029	DP1034974
DP503317	DP746278	DP11132263
DP564455	DP774517	
DP638763	DP776491	
DP714338	DP794240	
DP717107	DP808381	

(if insufficient space use Plan Form 6A annexure sheet)

SURVEYOR'S REFERENCE 03/192B (PP DP1135580)

CERTIFICATES, SIGNATURES AND SEALS

Sheet 2 of 3 sheet(s)

PLAN OF SUBDIVISION OF LOT 31 DP1132263

DP1135580

Registered: 30.11.2009

Subdivision Certificate No: 08-1859

Date of Endorsement: 24.7.09

Executed for and on behalf of Stockland) Development Pty Limited) ACN 000 064 835 by its duly authorised) Attorney under Power of Attorney) Registered in Book 4572 No 11 who) declares that he has no notification of) revocation of the said Power of Attorney) in the presence of:

.....
Signature of Witness

Anna Potts
.....
Name of Witness

133 Castlereagh St
Sydney
.....
Address of Witness

.....
Signature of Attorney

BARRY JOHN MANN
.....
Name of Attorney

Executed for and on behalf of) **ENERGY AUSTRALIA** by)
)
Katherine Morgaret Gunton)
Its duly constituted Attorney Pursuant to) Power of Attorney Registered Book 4522) No 401) in the presence of:

.....
Signature of Witness

BRIDGET ANNE THOMSON
.....
Name of Witness

570 George Street, Sydney NSW 2000
Address of Witness

.....
Signature of Attorney

SURVEYOR'S REFERENCE: 03/192B

(PP DP1135580)

* OFFICE USE ONLY

FORM 6A

ePlan

CERTIFICATES, SIGNATURES AND SEALS

PLAN OF SUBDIVISION OF LOT 31 DP1132263

*

DP1135580

*

Registered: 30.11.2009

* OFFICE USE ONLY

Subdivision Certificate No: 08-1859

Date of Endorsement:: 24.7.09.

MAITLAND MUTUAL BUILDING SOCIETY LIMITED
ACN 087 651 983 BY ITS ATTORNEY
(name) RODNEY WILLIAMS
(position) SECURITIES MANAGER
PURSUANT TO POWER OF ATTORNEY REGISTERED
BOOK 4521 No. 745
DATED: 06 OCT 2009
(signed)
- WITNESS
(MICHELE SEARL)

EXECUTED BY **MAITLAND MUTUAL BUILDING SOCIETY LIMITED**

SURVEYOR'S REFERENCE: 03-192B

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

9/3/2017 12:11PM

FOLIO: 2/718712

First Title(s): OLD SYSTEM
Prior Title(s): CA8487

Recorded	Number	Type of Instrument	C.T. Issue
17/12/1985	CA8487	CONVERSION ACTION	FOLIO CREATED EDITION 1
23/11/1990	Z356726	DISCHARGE OF MORTGAGE	EDITION 2
28/1/2003	9314273	TRANSMISSION APPLICATION	EDITION 3
30/1/2015	AJ43555	TRANSMISSION APPLICATION (EXECUTOR, ADMINISTRATOR, TRUSTEE)	EDITION 4
29/4/2015	AJ402141	TRANSFER	
29/4/2015	AJ402142	MORTGAGE	EDITION 5

*** END OF SEARCH ***

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

9/3/2017 12:31PM

FOLIO: 2/746278

First Title(s): OLD SYSTEM
Prior Title(s): VOL 9452 FOL 109 CA18539

Recorded	Number	Type of Instrument	C.T. Issue
6/4/1987	CA18539	CONVERSION ACTION	FOLIO CREATED EDITION 1
12/11/1992	E891017	MORTGAGE	EDITION 2
2/10/1996	2487489	DISCHARGE OF MORTGAGE	
2/10/1996	2487490	MORTGAGE	EDITION 3
2/11/2001	DP1034974	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

9/3/2017 12:15PM

FOLIO: 3/717107

First Title(s): OLD SYSTEM
Prior Title(s): VOL 9452 FOL 110 CA7125

Recorded	Number	Type of Instrument	C.T. Issue
2/10/1985	CA7125	CONVERSION ACTION	FOLIO CREATED EDITION 1
12/11/1986	DP638763	DEPOSITED PLAN	
22/7/1988	DP776491	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS
6/10/1993		AMENDMENT: PARISH-COUNTY	
14/9/2015	AJ811575	DEPARTMENTAL DEALING	

*** END OF SEARCH ***

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

9/3/2017 12:14PM

FOLIO: 31/776491

First Title(s): OLD SYSTEM
Prior Title(s): 3/717107

Recorded	Number	Type of Instrument	C.T. Issue
25/7/1988	DP776491	DEPOSITED PLAN	FOLIO CREATED EDITION 1
13/10/1994	U698426	MORTGAGE	EDITION 2
10/8/2001	7845159	DISCHARGE OF MORTGAGE	
10/8/2001	7845160	DISCHARGE OF MORTGAGE	
10/8/2001	7845161	TRANSFER	
10/8/2001	7845162	MORTGAGE	EDITION 3
2/11/2001	DP1034974	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

9/3/2017 12:17PM

FOLIO: 31/1132263

First Title(s): OLD SYSTEM
Prior Title(s): 311/1034974

Recorded	Number	Type of Instrument	C.T. Issue
27/1/2009	DP1132263	DEPOSITED PLAN	FOLIO CREATED EDITION 1
30/11/2009	DP1135580	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

9/3/2017 12:13PM

FOLIO: 310/1034974

First Title(s): OLD SYSTEM
Prior Title(s): 31/776491

Recorded	Number	Type of Instrument	C.T. Issue
2/11/2001	DP1034974	DEPOSITED PLAN	FOLIO CREATED EDITION 1
14/1/2004	AA325758	DISCHARGE OF MORTGAGE	EDITION 2
3/2/2004	AA379722	MORTGAGE	EDITION 3

*** END OF SEARCH ***

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
9/3/2017 12:18PM

FOLIO: 311/1034974

First Title(s): OLD SYSTEM
Prior Title(s): 2/746278 31/776491

Recorded	Number	Type of Instrument	C.T. Issue
2/11/2001	DP1034974	DEPOSITED PLAN	FOLIO CREATED EDITION 1
15/2/2002	8361276	DISCHARGE OF MORTGAGE	
15/2/2002	8361277	DISCHARGE OF MORTGAGE	
15/2/2002	8361278	TRANSFER	
15/2/2002	8361279	MORTGAGE	EDITION 2
18/2/2004	AA429209	MORTGAGE	EDITION 3
27/1/2009	DP1132263	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

9/3/2017 12:16PM

FOLIO: 311/1135580

First Title(s): OLD SYSTEM
Prior Title(s): 31/1132263

Recorded	Number	Type of Instrument	C.T. Issue
30/11/2009	DP1135580	DEPOSITED PLAN	FOLIO CREATED EDITION 1
12/8/2016	AK674633	DISCHARGE OF MORTGAGE	EDITION 2

*** END OF SEARCH ***

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 2/718712

SEARCH DATE	TIME	EDITION NO	DATE
9/3/2017	12:08 PM	5	29/4/2015

LAND

LOT 2 IN DEPOSITED PLAN 718712
AT LOCHINVAR
LOCAL GOVERNMENT AREA MAITLAND
PARISH OF GOSFORTH COUNTY OF NORTHUMBERLAND
TITLE DIAGRAM DP718712

FIRST SCHEDULE

EDWIN JAMES AIRD
CAROL ANN AIRD
AS JOINT TENANTS (T AJ402141)

SECOND SCHEDULE (4 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 DP718712 RIGHT OF CARRIAGEWAY APPURTENANT TO THE LAND ABOVE DESCRIBED
3 DP718712 EASEMENT FOR SERVICES APPURTENANT TO THE LAND ABOVE DESCRIBED
4 AJ402142 MORTGAGE TO MAITLAND MUTUAL BUILDING SOCIETY LIMITED

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 310/1034974

SEARCH DATE	TIME	EDITION NO	DATE
9/3/2017	12:10 PM	3	3/2/2004

LAND

LOT 310 IN DEPOSITED PLAN 1034974
AT LOCHINVAR
LOCAL GOVERNMENT AREA MAITLAND
PARISH OF GOSFORTH COUNTY OF NORTHUMBERLAND
TITLE DIAGRAM DP1034974

FIRST SCHEDULE

RICHARD KARL HVIRF

SECOND SCHEDULE (2 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 AA379722 MORTGAGE TO STOCKLAND DEVELOPMENT PTY LIMITED

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 311/1135580

SEARCH DATE	TIME	EDITION NO	DATE
9/3/2017	12:10 PM	2	12/8/2016

LAND

LOT 311 IN DEPOSITED PLAN 1135580
AT LOCHINVAR
LOCAL GOVERNMENT AREA MAITLAND
PARISH OF GOSFORTH COUNTY OF NORTHUMBERLAND
TITLE DIAGRAM DP1135580

FIRST SCHEDULE

EDWIN JAMES AIRD JUNIOR

SECOND SCHEDULE (3 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 AA429209 MORTGAGE TO STOCKLAND DEVELOPMENT PTY LIMITED
3 DP1135580 EASEMENT FOR ELECTRICITY AND OTHER PURPOSES VARIABLE WIDTH AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM

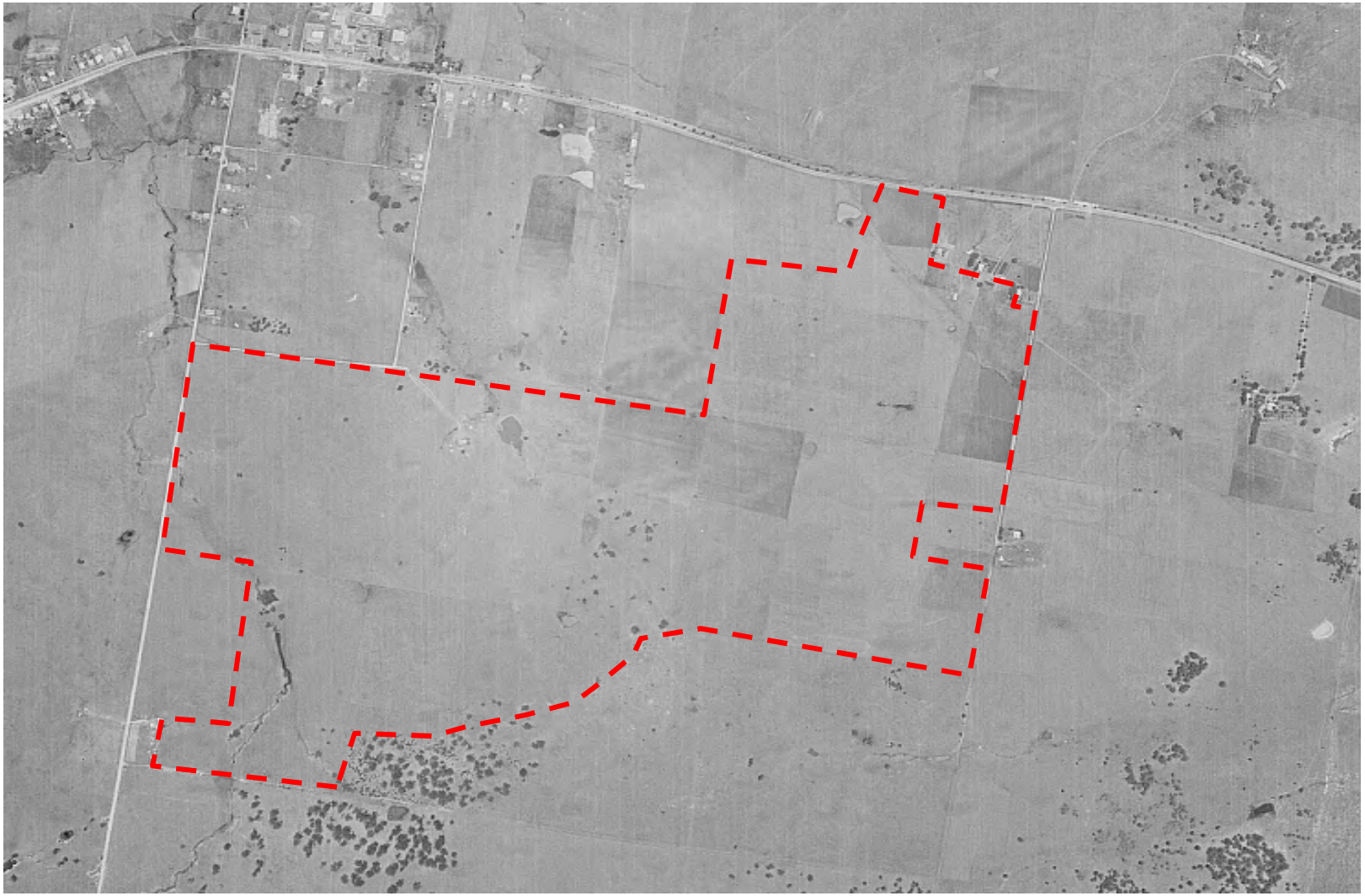
NOTATIONS

DP638763 NOTE: PROPOSED EASEMENT

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Appendix C – Aerial Photographs

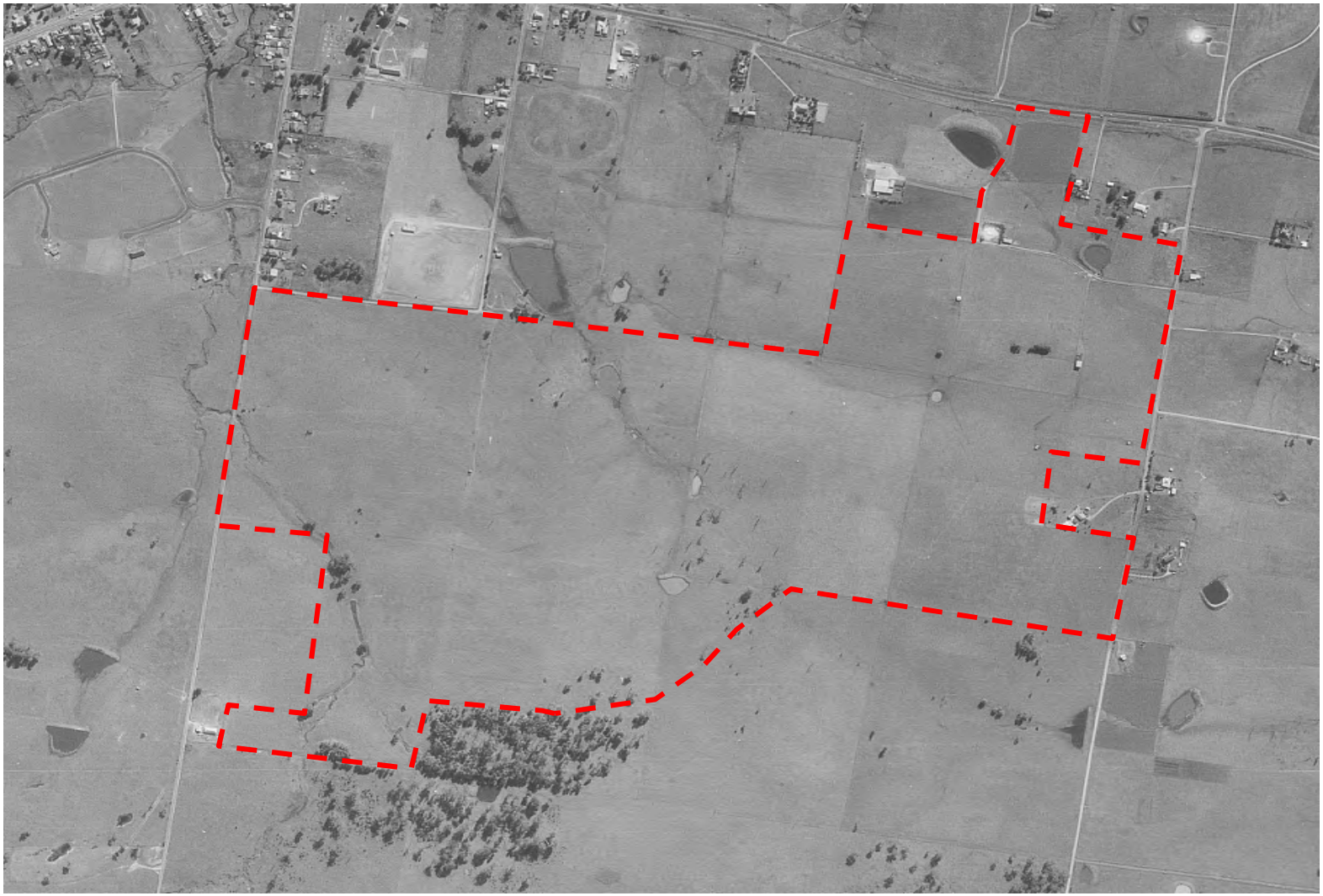


Site Boundary

drawn	**DCH**		client:	**PULVER COOPER & BLACKLEY**
approved		coffey A TETRA TECH COMPANY	project:	**PHASE 1 & 2 CONTAMINATION ASSESSMENT** **PROPOSED RESIDENTIAL SUBDIVISION, WINDERS LANE, LOCHINVAR NSW**
date	**18/04/2017**		title:	**1963 AERIAL PHOTOGRAPH**
scale	**NTS**		project no: **NTLEN202989**	figure no: **1963**
original	**A4**			

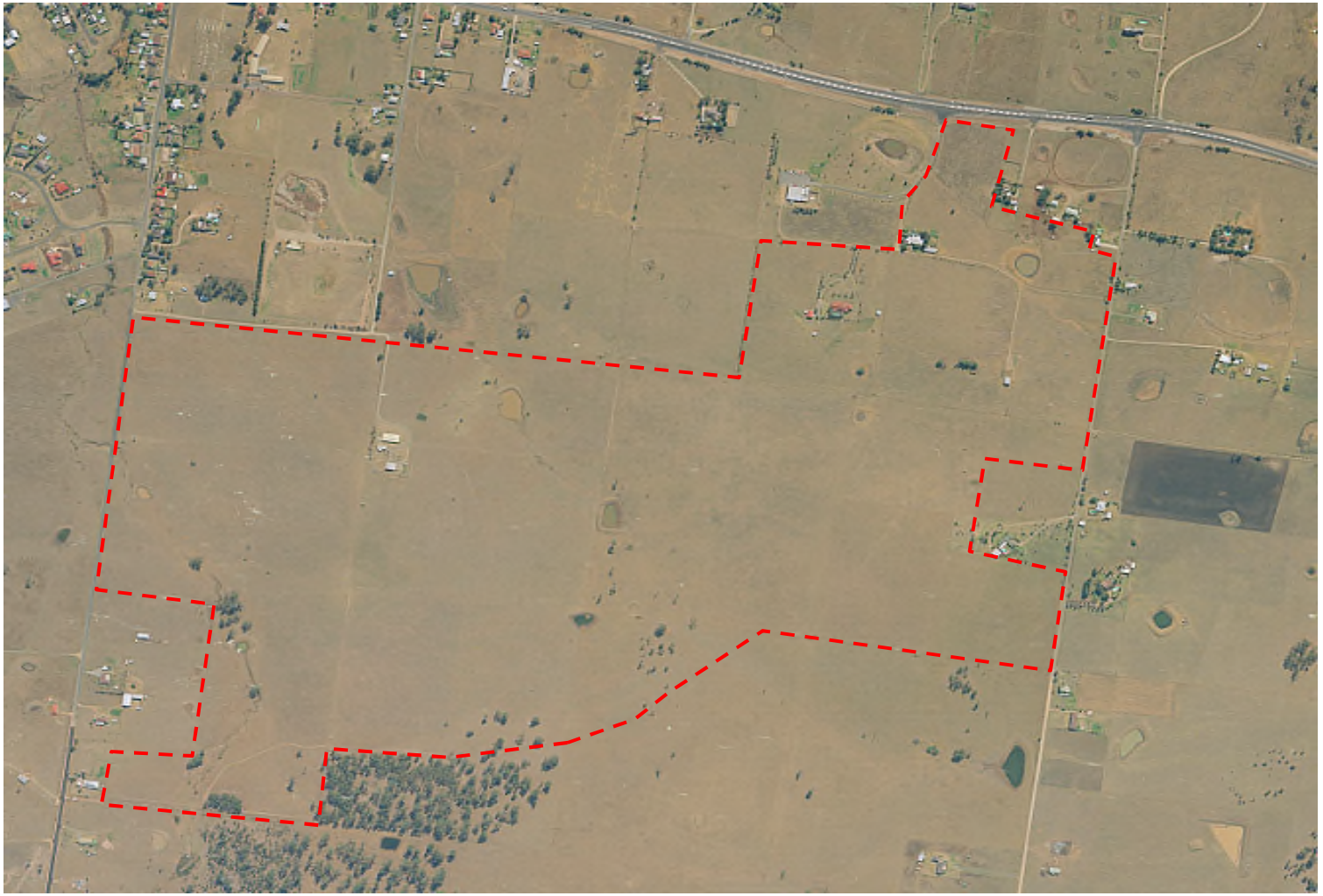
Site Boundary

drawn	DCH		client:	PULVER COOPER & BLACKLEY
approved		coffey A TETRA TECH COMPANY	project:	PHASE 1 & 2 CONTAMINATION ASSESSMENT PROPOSED RESIDENTIAL SUBDIVISION, WINDERS LANE, LOCHINVAR NSW
date	18/04/2017		title:	1975 AERIAL PHOTOGRAPH
scale	NTS		project no: NTLEN202989	figure no: 1975
original	A4			



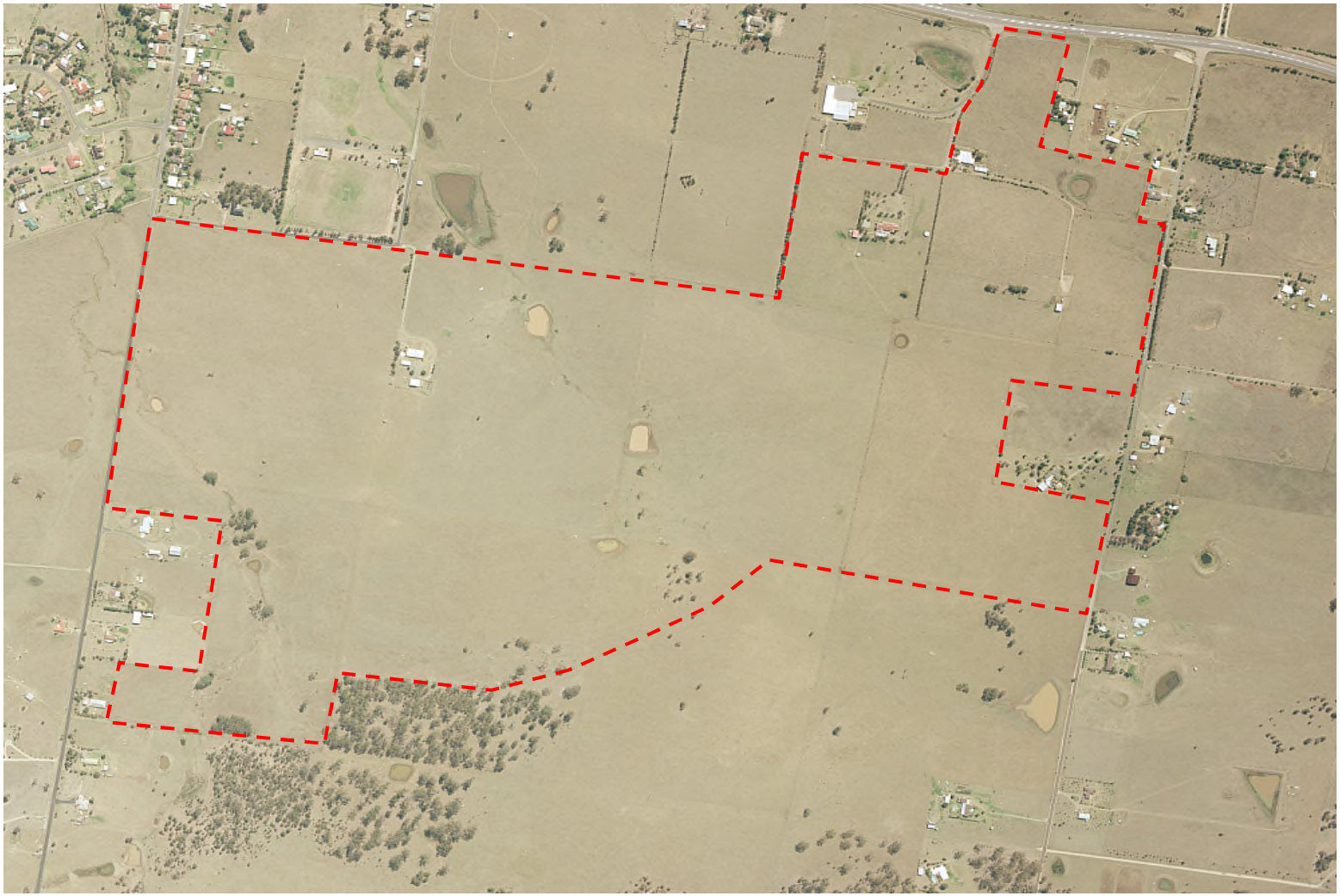
Site Boundary

drawn	DCH		client:	PULVER COOPER & BLACKLEY
approved			project:	PHASE 1 & 2 CONTAMINATION ASSESSMENT PROPOSED RESIDENTIAL SUBDIVISION, WINDERS LANE, LOCHINVAR NSW
date	18/04/2017		title:	1984 AERIAL PHOTOGRAPH
scale	NTS		project no: NTLEN202989	figure no: 1984
original	A4			



Site Boundary

drawn	DCH		client:	PULVER COOPER & BLACKLEY
approved			project:	PHASE 1 & 2 CONTAMINATION ASSESSMENT PROPOSED RESIDENTIAL SUBDIVISION, WINDERS LANE, LOCHINVAR NSW
date	18/04/2017		title:	1994 AERIAL PHOTOGRAPH
scale	NTS		project no: NTLEN202989	figure no: 1994
original	A4			



Site Boundary

drawn	DCH		client:	PULVER COOPER & BLACKLEY
approved		coffey A TETRA TECH COMPANY	project:	PHASE 1 & 2 CONTAMINATION ASSESSMENT PROPOSED RESIDENTIAL SUBDIVISION, WINDERS LANE, LOCHINVAR NSW
date	18/04/2017		title:	2004 AERIAL PHOTOGRAPH
scale	NTS		project no: NTLEN202989	figure no: 2004
original	A4			

Site Boundary

Source: Google Earth, 2016

drawn	**DCH**	coffey A TETRA TECH COMPANY	client:	**PULVER COOPER & BLACKLEY**
approved			project:	**PHASE 1 & 2 CONTAMINATION ASSESSMENT** **PROPOSED RESIDENTIAL SUBDIVISION, WINDERS LANE, LOCHINVAR NSW**
date	**18/04/2017**		title:	**2016 AERIAL PHOTOGRAPH**
scale	**NTS**		project no: **NTLEN202989**	figure no: **2016**
original	**A4**			

Appendix D – Site Photographs

Photograph 1: Looking across Lot 32

Photograph 2: Stockpile of soil on Lot 32

drawn	**DCH**		client:	**PULVER COOPER & BLACKLEY**
approved		coffey A TETRA TECH COMPANY	project:	**PHASE 1 & 2 CONTAMINATION ASSESSMENT PROPOSED RESIDENTIAL SUBDIVISION, WINDERS LANE, LOCHINVAR NSW**
date	**18/04/2017**		title:	**SITE PHOTOGRAPHS**
scale	**NTS**		project no: **NTLEN202989**	photo no: **1 & 2**
original size	**A4**			

Photograph 3: House on Lot 2

Photograph 4: Shed and water tank on Lot 2

drawn	**DCH**		client:	**PULVER COOPER & BLACKLEY**
approved		coffey A TETRA TECH COMPANY	project:	**PHASE 1 & 2 CONTAMINATION ASSESSMENT PROPOSED RESIDENTIAL SUBDIVISION, WINDERS LANE, LOCHINVAR NSW**
date	**18/04/2017**		title:	**SITE PHOTOGRAPHS**
scale	**NTS**		project no: **NTLEN202989**	photo no: **3 & 4**
original size	**A4**			

Photograph 5: Pond on Lot 310

Photograph 6: Looking across Lot 310 towards house

drawn	**DCH**		client:	**PULVER COOPER & BLACKLEY**
approved		coffey A TETRA TECH COMPANY	project:	**PHASE 1 & 2 CONTAMINATION ASSESSMENT PROPOSED RESIDENTIAL SUBDIVISION, WINDERS LANE, LOCHINVAR NSW**
date	**18/04/2017**		title:	**SITE PHOTOGRAPHS**
scale	**NTS**		project no: **NTLEN202989**	photo no: **5 & 6**
original size	**A4**			

Photograph 7: House on Lot 310

Photograph 8: Looking across Lot 311

drawn	**DCH**		client:	**PULVER COOPER & BLACKLEY**
approved			project:	**PHASE 1 & 2 CONTAMINATION ASSESSMENT PROPOSED RESIDENTIAL SUBDIVISION, WINDERS LANE, LOCHINVAR NSW**
date	**18/04/2017**			
scale	**NTS**		title:	**SITE PHOTOGRAPHS**
original size	**A4**		project no: **NTLEN202989**	photo no: **7 & 8**

Photograph 9: Pond on Lot 311

Photograph 10: Area of trees and rubbish on Lot 311

drawn	**DCH**	coffey A TETRA TECH COMPANY	client:	**PULVER COOPER & BLACKLEY**
approved			project:	**PHASE 1 & 2 CONTAMINATION ASSESSMENT PROPOSED RESIDENTIAL SUBDIVISION, WINDERS LANE, LOCHINVAR NSW**
date	**18/04/2017**			
scale	**NTS**		title:	**SITE PHOTOGRAPHS**
original size	**A4**		project no: **NTLEN202989**	photo no: **9 & 10**

Appendix E – Section 149 Planning Certificates

S149 Planning Certificate

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979 (AS AMENDED)

maitland city council

APPLICANT	**Coffey Services Australia** **19 Warabrook Boulevard** **WARABROOK NSW 2304**	Certificate No Certificate Date Fee Paid Receipt No No. of Pages	**17/725** **09/03/2017** **133.00** **45097** **Page 1 of 8**
Your Reference	**ENAUWAEA04770AB**		
PROPERTY	**LOT 310 DP1034974** **44 CHRISTOPHER ROAD** **LOCHINVAR**		
PARISH	**Gosforth**		
PROPERTY NO	**39145**		

IMPORTANT: Please read this certificate carefully.

This certificate contains important information about the land described above.

Please check for any item, which could be inconsistent with the proposed use or development of the land. If there is anything you do not understand, please contact the Council by phone on (02) 49349700, or personally at Council's office at 285-287 High Street Maitland.

The information provided in this certificate relates only to the land described above. If you require information about adjoining or nearby land, or about the Council's development policies or codes for the general area, contact Council's Planning & Environment Department.

All information provided is correct as at the date issued on this certificate. However, it is possible for changes to occur at any time after issue of this certificate. We recommend that you only rely upon a very recent certificate.

The following responses are based on the Council's records and / or information from sources outside the Council. The responses are provided with all due care and in good faith, however the Council cannot accept responsibility for any omission or inaccuracy arising from information outside the control of the Council.

Furthermore, while this certificate indicates the general effect of the zoning of the abovementioned land, it is suggested that the applicable planning instruments be further investigated to determine any additional requirements.

Copies of Maitland City Council's Local Environmental Planning Instrument, Development Control Plans and Policies are available for purchase from Council's Customer Service Centre.

285 – 287 High Street Maitland NSW 2320
t02 4934 9700 f02 4933 3209
info@maitland.nsw.gov.au maitland.nsw.gov.au DX21613 Maitland
All correspondence should be directed to : General Manager PO Box 220 Maitland NSW 2320

PART 1: MATTERS PROVIDED PURSUANT TO SECTION 149 (2)

1. Local Environmental Plans (LEP)

Maitland LEP 2011, published 16 December 2011, applies to the land.

2. Exhibited draft Local Environmental Plans

No draft Local Environmental Plans that have been on public exhibition under the Act are applicable to the land.

3. Development Control Plan prepared by Council

Maitland Development Control Plan 2011 applies to the land.

4. Development Control Plans prepared by the Director-General

The Council has not been notified of any Development Control Plan applying to the land that has been prepared by the Director-General under section 51A of the Act.

5. State Environmental Planning Policies

The Minister for Planning has notified that the following State Environmental Planning Policies shall be specified on certificates under Section 149 of the Environmental Planning and Assessment Act, 1979.

The land is affected by the following State Environmental Planning Policies:

State Environmental Planning Policy No. 21 - Caravan Parks

State Environmental Planning Policy No. 30 - Intensive Agriculture

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

State Environmental Planning Policy No. 36 - Manufactured Home Estates

State Environmental Planning Policy No. 44 - Koala Habitat Protection

State Environmental Planning Policy No. 50 - Canal Estate Development

State Environmental Planning Policy No. 55 - Remediation Of Land

State Environmental Planning Policy No. 64 - Advertising And Signage

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

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

State Environmental Planning Policy - Major Development 2005

State Environmental Planning Policy - State And Regional Development 2011

State Environmental Planning Policy - Affordable Rental Housing 2009

State Environmental Planning Policy - Building Sustainability Index: Basix 2004

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

State Environmental Planning Policy - Infrastructure 2007

State Environmental Planning Policy - Mining, Petroleum Production And Extractive Industries 2007

State Environmental Planning Policy - Rural Lands 2008

State Environmental Planning Policy - Housing For Seniors Or People With A Disability 2004

State Environmental Planning Policy - (Miscellaneous Consent Provisions) 2007

6. Draft State Environmental Planning Policies

No draft State Environmental Planning Policy(s) applying to the land has been publicised as referred to in section 39(2) of the Act.

7. Zoning and land use under relevant LEPs

Maitland LEP 2011, published 16 December 2011, identifies the zone applying to the land as:

R1 General Residential

The following development control table(s) give the objectives of the zone, the description of the zone and identify development allowed or prohibited in each zone. Development consent where required, must be obtained from the Council.

R1 General Residential

1) **Objectives of zone**

- To provide for the housing needs of the community.
- To provide for a variety of housing types and densities.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.

2) **Permitted without consent**

Home-based child care; Home occupations

3) **Permitted with consent**

Attached dwellings; Bed and breakfast accommodation; Boarding houses; Building identification signs; Business identification signs; Child care centres; Community facilities; Dwelling houses; Group homes; Home industries; Hostels; Hotel or motel accommodation; Multi dwelling housing; Neighbourhood shops; Places of public worship; Residential flat buildings; Respite day care centres; Roads; Semi-detached dwellings; Seniors housing; Serviced apartments; Shop top housing; Any other development not specified in item 2 or 4

4) **Prohibited**

Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Biosolids treatment facilities; Boat building and repair facilities; Boat launching ramps; Boat sheds; Camping grounds; Car parks; Caravan parks; Cemeteries; Charter and tourism boating facilities; Commercial premises; Correctional centres; Crematoria; Depots; Eco-tourist facilities; Entertainment facilities; Extractive industries; Farm buildings; Forestry; Freight transport facilities; Function centres; Heavy industrial storage establishments; Helipads; Highway service centres; Home occupations (sex services); Industrial retail outlets; Industrial training facilities; Industries; Information and education facilities; Jetties; Marinas; Mooring pens; Moorings; Mortuaries; Open cut mining; Passenger transport facilities; Public administration buildings; Recreation facilities (indoor); Recreation facilities (major); Registered clubs; Research stations; Restricted premises; Rural industries; Rural workers dwellings; Service stations; Sewerage treatment plants; Sex services premises; Signage; Storage premises; Tourist and visitor accommodation; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Veterinary hospitals; Warehouse or distribution centres; Waste or resource management facilities; Water recreation structures; Water recycling facilities; Wharf or boating facilities; Wholesale supplies

8. Land dimensions to permit the erection of a dwelling-house on the land

Maitland LEP 2011 does not contain a development standard specifying the land dimensions required to permit the erection of a dwelling-house on the land.

9. Critical Habitat

No Local Environmental Plan or draft Local Environmental Plan identifies the land as including or comprising critical habitat.

10. Conservation Area/Item of Environmental Heritage

The land is not in a Heritage Conservation Area. The land does not contain an item of Environmental Heritage.

11. Directions Under Part 3A

There is **no** direction by the Minister 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 (other than a project of a class prescribed by the regulations) of the Act does not have effect.

12. Coastal Protection

The Council has not received any notification from the Department of Services, Technology and Administration that the land is affected by the operation of section 38 or 39 of the Coastal Protection Act 1979.

13. Mine Subsidence Compensation Act 1961

The land has not been proclaimed to be within a Mine Subsidence District under the meaning of section 15 of the Mine Subsidence Compensation Act 1961.

14. Road widening or realignment

The land is not affected by any road widening or re-alignment under:

(a) Division 2 of Part 3 of the Roads Act 1993: or (b) any environmental planning instrument; (c) any resolution of the council.

15. Council and other public authority policies on hazard risk restrictions

All land within the Maitland Local Government Area has the potential to contain acid sulfate soils. Clause 7.1 in the Maitland Local Environmental Plan 2011 generally applies. Development consent is required where works described in the Table to this clause are proposed on land shown on the Maitland Local Environmental Plan 2011 Acid Sulfate Soils Map as being of the class specified for those works.

16. Bushfire Prone Land

The land is not mapped as 'bushfire prone land'.

17. Flood Related Development Controls

Development on this land or part of this land for the purposes of dwelling houses, attached dwellings, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) **is not** subject to flood related development controls contained within cl. 7.3 of the Maitland Local Environmental Plan 2011 and s. B3 of the Maitland Development Control Plan 2011.

Development on this land or part of this land for any other purpose **is not** subject to flood related development controls contained within cl. 7.3 of the Maitland Local Environmental Plan 2011 and s. B3 of the Maitland Development Control Plan 2011.

Information given in relation to flooding is based upon Councils adopted 1:100 ARI (Average Recurrent Interval) flood event.

The Maitland Local Environmental Plan 2011 identifies the flood planning level (FPL) as the level of a 1:100 ARI flood event plus 0.5m freeboard.

18. Land reserved for acquisition

No environmental planning instrument, deemed environmental planning instrument or draft environmental planning instrument applying to the land provides for the acquisition of the land by a public authority, as referred to in section 27 of the Act.

19. Contribution Plans

The following contribution plan(s) apply to the land:

- Maitland S94 Contributions Plan (City wide) 2006
- Maitland S94A Levy Contributions Plan 2006
- Lochinvar S94 Contribution Plan 2013
- Maitland City Wide Section 94 Contributions Plan 2016

Contributions plans may be inspected and purchased at Council's Customer Service Centre.

20. Property Vegetation Plans

The Council has not received any notification from Hunter Local Land Services that the land is affected by a property vegetation plan under the Native Vegetation Act 2003.

21. Order under Trees (Disputes Between Neighbours) Act 2006.

Council has not received notification from the Land and Environment Court of New South Wales that the land is affected by an Order Under Trees (Disputes Between Neighbours) Act 2006.

22. Conditions Affecting Seniors Housing

1) Site Compatibility Certificate

Council is unaware of whether a current site compatibility certificate issued under clause 25 of the State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 has been issued for the land.

2) Conditions of Development Consent since 11 October 2007

No development consent has been granted for the development permitted by State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 after 11 October 2007.

23. Site Compatibility Certificates for Infrastucture

Council is unaware of whether a valid site compatibility certificate has been issued under clause 19 of State Environmental Planning Policy (Infrastructure) 2007 for the land.

24. Complying Development

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

Complying development under the **Rural Housing Code** may not be carried out on the land as it is not within an applicable zone.

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

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

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

Complying development under the **Commercial and Industrial (New Buildings and Additions) Code** may not be carried out on the land as it is not within an applicable zone.

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

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

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

Note: Despite the above provisions, if only part of a lot is subject to an exclusion or exemption under Clause 1.17A or Clause 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) Amendment (Commercial and Industrial Development and Other Matters) 2013, complying development may be carried out on that part of the lot that is not affected by the exclusion or exemption.

25. Contaminated Land

(a) The land to which this certificate relates is not significantly contaminated land within the meaning of the Contaminated Land Management Act 1997.

(b) The land to which this certificate relates is not subject to a management order within the meaning of the Contaminated Land Management Act 1997.

(c) The land to which this certificate relates is not the subject of an approved voluntary management proposal within the meaning of the Contaminated Land Management Act 1997.

(d) The land to which this certificate relates is not subject to an ongoing maintenance order within the meaning of the Contaminated Land Management Act 1997.

(e) Council has not been provided with a site audit statement, within the meaning of the Contaminated Land Management Act 1997, for the land to which this certificate relates.

26. Site compatibility certificates and conditions for affordable rental housing

(1) Site Compatibility Certificate

Council is unaware if a current site compatibility certificate (affordable rental housing) has been issued in accordance with State Environmental Planning Policy (Affordable Rental Housing) 2009.

27. Nation Building and Jobs Plan (State Infrastructure Delivery) Act 2009

Council is unaware of whether an Order or an Authorisation has been issued under Section 23 and 24 of the Nation Building and Jobs Plan (State Infrastructure Delivery) Act 2009, for the carrying out of development on the land.

PART 2: ADDITIONAL MATTERS PROVIDED PURSUANT TO SECTION 149 (5)

The following information is provided in accordance with section 149(5) of the Environmental Planning and Assessment Act 1979. Section 149(6) of the Act states that a Council shall not incur any liability in respect of advice provided in good faith pursuant to sub-section 149(5). If this information is to be relied upon, it should be independently checked.

Maitland LEP 2011 makes the following special provisions in relation to the land

1. Preservation of trees or vegetation

Clause 5.9 in the Maitland Local Environmental Plan 2011 applies to the land. The objective of this clause is to preserve the amenity of the area, including biodiversity values, through the preservation of trees or other vegetation.

2. Development Consent

Council's records indicate that the land has not had any development consent granted within the five (5) years preceding the date of this certificate.

3. Draft DCP's

No Draft Development Control Plan is expressed to apply to the land subject to this certificate.

4. Suspension of covenants

Clause 1.9A in the Maitland Local Environmental Plan 2011 applies to all land within the Maitland Local Government Area. This clause suspends any agreement, covenant or other instrument that restricts the development of land that is permissible under the provisions of the Maitland Local Environmental Plan 2011 to the extent necessary to serve that purpose.

5. Filling of land

Earthworks (excavation and filling of land) require development consent. Clause 7.2 in the Maitland Local Environmental Plan 2011 applies to all land within the Maitland Local Government Area. Earthworks (defined as both excavation and filling of land) require development consent of Council unless the works are exempt development, ancillary to other development for which development consent is required or granted, or considered by Council to be of a minor nature.

6. Development in the vicinity of heritage items

Clause 5.10 in the Maitland Local Environmental Plan 2011 generally applies to all land in the Maitland Local Government Area, where the land is located in the vicinity of a heritage item or heritage conservation area. This clause requires a consent authority to consider the effect of the proposed development on the heritage significance of the item or area concerned, before granting development consent.

David Evans - General Manager

Per: _____

End of Certificate

S149 Planning Certificate

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979 (AS AMENDED)

maitland city council

APPLICANT	Coffey Services Australia 19 Warabrook Boulevard WARABROOK NSW 2304	Certificate No Certificate Date Fee Paid Receipt No No. of Pages	17/726 09/03/2017 133.00 45097 Page 1 of 8
Your Reference	ENAUWARA04770AB		
PROPERTY	LOT 311 DP1135580 70 CHRISTOPHER ROAD LOCHINVAR		
PARISH	Gosforth		
PROPERTY NO	46622		

IMPORTANT: Please read this certificate carefully.

This certificate contains important information about the land described above.

Please check for any item, which could be inconsistent with the proposed use or development of the land. If there is anything you do not understand, please contact the Council by phone on (02) 49349700, or personally at Council's office at 285-287 High Street Maitland.

The information provided in this certificate relates only to the land described above. If you require information about adjoining or nearby land, or about the Council's development policies or codes for the general area, contact Council's Planning & Environment Department.

All information provided is correct as at the date issued on this certificate. However, it is possible for changes to occur at any time after issue of this certificate. We recommend that you only rely upon a very recent certificate.

The following responses are based on the Council's records and / or information from sources outside the Council. The responses are provided with all due care and in good faith, however the Council cannot accept responsibility for any omission or inaccuracy arising from information outside the control of the Council.

Furthermore, while this certificate indicates the general effect of the zoning of the abovementioned land, it is suggested that the applicable planning instruments be further investigated to determine any additional requirements.

Copies of Maitland City Council's Local Environmental Planning Instrument, Development Control Plans and Policies are available for purchase from Council's Customer Service Centre.

285 – 287 High Street Maitland NSW 2320
t02 4934 9700 f02 4933 3209
info@maitland.nsw.gov.au maitland.nsw.gov.au DX21613 Maitland
All correspondence should be directed to : General Manager PO Box 220 Maitland NSW 2320

PART 1: MATTERS PROVIDED PURSUANT TO SECTION 149 (2)

1. Local Environmental Plans (LEP)

Maitland LEP 2011, published 16 December 2011, applies to the land.

2. Exhibited draft Local Environmental Plans

No draft Local Environmental Plans that have been on public exhibition under the Act are applicable to the land.

3. Development Control Plan prepared by Council

Maitland Development Control Plan 2011 applies to the land.

4. Development Control Plans prepared by the Director-General

The Council has not been notified of any Development Control Plan applying to the land that has been prepared by the Director-General under section 51A of the Act.

5. State Environmental Planning Policies

The Minister for Planning has notified that the following State Environmental Planning Policies shall be specified on certificates under Section 149 of the Environmental Planning and Assessment Act, 1979.

The land is affected by the following State Environmental Planning Policies:

State Environmental Planning Policy No. 21 - Caravan Parks

State Environmental Planning Policy No. 30 - Intensive Agriculture

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

State Environmental Planning Policy No. 36 - Manufactured Home Estates

State Environmental Planning Policy No. 44 - Koala Habitat Protection

State Environmental Planning Policy No. 50 - Canal Estate Development

State Environmental Planning Policy No. 55 - Remediation Of Land

State Environmental Planning Policy No. 64 - Advertising And Signage

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

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

State Environmental Planning Policy - Major Development 2005

State Environmental Planning Policy - State And Regional Development 2011

State Environmental Planning Policy - Affordable Rental Housing 2009

State Environmental Planning Policy - Building Sustainability Index: Basix 2004

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

State Environmental Planning Policy - Infrastructure 2007

State Environmental Planning Policy - Mining, Petroleum Production And Extractive Industries 2007

State Environmental Planning Policy - Rural Lands 2008

State Environmental Planning Policy - Housing For Seniors Or People With A Disability 2004

State Environmental Planning Policy - (Miscellaneous Consent Provisions) 2007

6. Draft State Environmental Planning Policies

No draft State Environmental Planning Policy(s) applying to the land has been publicised as referred to in section 39(2) of the Act.

7. Zoning and land use under relevant LEPs

Maitland LEP 2011, published 16 December 2011, identifies the zone applying to the land as:

R1 General Residential

The following development control table(s) give the objectives of the zone, the description of the zone and identify development allowed or prohibited in each zone. Development consent where required, must be obtained from the Council.

R1 General Residential

1) **Objectives of zone**

- To provide for the housing needs of the community.
- To provide for a variety of housing types and densities.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.

2) **Permitted without consent**

Home-based child care; Home occupations

3) **Permitted with consent**

Attached dwellings; Bed and breakfast accommodation; Boarding houses; Building identification signs; Business identification signs; Child care centres; Community facilities; Dwelling houses; Group homes; Home industries; Hostels; Hotel or motel accommodation; Multi dwelling housing; Neighbourhood shops; Places of public worship; Residential flat buildings; Respite day care centres; Roads; Semi-detached dwellings; Seniors housing; Serviced apartments; Shop top housing; Any other development not specified in item 2 or 4

4) **Prohibited**

Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Biosolids treatment facilities; Boat building and repair facilities; Boat launching ramps; Boat sheds; Camping grounds; Car parks; Caravan parks; Cemeteries; Charter and tourism boating facilities; Commercial premises; Correctional centres; Crematoria; Depots; Eco-tourist facilities; Entertainment facilities; Extractive industries; Farm buildings; Forestry; Freight transport facilities; Function centres; Heavy industrial storage establishments; Helipads; Highway service centres; Home occupations (sex services); Industrial retail outlets; Industrial training facilities; Industries; Information and education facilities; Jetties; Marinas; Mooring pens; Moorings; Mortuaries; Open cut mining; Passenger transport facilities; Public administration buildings; Recreation facilities (indoor); Recreation facilities (major); Registered clubs; Research stations; Restricted premises; Rural industries; Rural workers dwellings; Service stations; Sewerage treatment plants; Sex services premises; Signage; Storage premises; Tourist and visitor accommodation; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Veterinary hospitals; Warehouse or distribution centres; Waste or resource management facilities; Water recreation structures; Water recycling facilities; Wharf or boating facilities; Wholesale supplies

8. Land dimensions to permit the erection of a dwelling-house on the land

Maitland LEP 2011 does not contain a development standard specifying the land dimensions required to permit the erection of a dwelling-house on the land.

9. Critical Habitat

No Local Environmental Plan or draft Local Environmental Plan identifies the land as including or comprising critical habitat.

10. Conservation Area/Item of Environmental Heritage

The land is not in a Heritage Conservation Area. The land does not contain an item of Environmental Heritage.

11. Directions Under Part 3A

There is **no** direction by the Minister 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 (other than a project of a class prescribed by the regulations) of the Act does not have effect.

12. Coastal Protection

The Council has not received any notification from the Department of Services, Technology and Administration that the land is affected by the operation of section 38 or 39 of the Coastal Protection Act 1979.

13. Mine Subsidence Compensation Act 1961

The land has not been proclaimed to be within a Mine Subsidence District under the meaning of section 15 of the Mine Subsidence Compensation Act 1961.

14. Road widening or realignment

The land is not affected by any road widening or re-alignment under:

(a) Division 2 of Part 3 of the Roads Act 1993: or (b) any environmental planning instrument; (c) any resolution of the council.

15. Council and other public authority policies on hazard risk restrictions

All land within the Maitland Local Government Area has the potential to contain acid sulfate soils. Clause 7.1 in the Maitland Local Environmental Plan 2011 generally applies. Development consent is required where works described in the Table to this clause are proposed on land shown on the Maitland Local Environmental Plan 2011 Acid Sulfate Soils Map as being of the class specified for those works.

16. Bushfire Prone Land

The land is mapped as 'bushfire prone land' and as such restrictions may apply to new development on this land.

17. Flood Related Development Controls

Development on this land or part of this land for the purposes of dwelling houses, attached dwellings, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) **is not** subject to flood related development controls contained within cl. 7.3 of the Maitland Local Environmental Plan 2011 and s. B3 of the Maitland Development Control Plan 2011.

Development on this land or part of this land for any other purpose **is not** subject to flood related development controls contained within cl. 7.3 of the Maitland Local Environmental Plan 2011 and s. B3 of the Maitland Development Control Plan 2011.

Information given in relation to flooding is based upon Councils adopted 1:100 ARI (Average Recurrent Interval) flood event.

The Maitland Local Environmental Plan 2011 identifies the flood planning level (FPL) as the level of a 1:100 ARI flood event plus 0.5m freeboard.

18. Land reserved for acquisition

No environmental planning instrument, deemed environmental planning instrument or draft environmental planning instrument applying to the land provides for the acquisition of the land by a public authority, as referred to in section 27 of the Act.

19. Contribution Plans

The following contribution plan(s) apply to the land:

- Maitland S94A Levy Contributions Plan 2006

- Maitland S94 Contributions Plan (City wide) 2006

- Lochinvar S94 Contribution Plan 2013

- Maitland City Wide Section 94 Contributions Plan 2016

Contributions plans may be inspected and purchased at Council's Customer Service Centre.

20. Property Vegetation Plans

The Council has not received any notification from Hunter Local Land Services that the land is affected by a property vegetation plan under the Native Vegetation Act 2003.

21. Order under Trees (Disputes Between Neighbours) Act 2006.

Council has not received notification from the Land and Environment Court of New South Wales that the land is affected by an Order Under Trees (Disputes Between Neighbours) Act 2006.

22. Conditions Affecting Seniors Housing

1) Site Compatibility Certificate

Council is unaware of whether a current site compatibility certificate issued under clause 25 of the State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 has been issued for the land.

2) Conditions of Development Consent since 11 October 2007

No development consent has been granted for the development permitted by State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 after 11 October 2007.

23. Site Compatibility Certificates for Infrastucture

Council is unaware of whether a valid site compatibility certificate has been issued under clause 19 of State Environmental Planning Policy (Infrastructure) 2007 for the land.

24. Complying Development

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

Complying development under the **Rural Housing Code** may not be carried out on the land as it is not within an applicable zone.

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

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

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

Complying development under the **Commercial and Industrial (New Buildings and Additions) Code** may not be carried out on the land as it is not within an applicable zone.

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

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

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

Note: Despite the above provisions, if only part of a lot is subject to an exclusion or exemption under Clause 1.17A or Clause 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) Amendment (Commercial and Industrial Development and Other Matters) 2013, complying development may be carried out on that part of the lot that is not affected by the exclusion or exemption.

25. Contaminated Land

(a) The land to which this certificate relates is not significantly contaminated land within the meaning of the Contaminated Land Management Act 1997.

(b) The land to which this certificate relates is not subject to a management order within the meaning of the Contaminated Land Management Act 1997.

(c) The land to which this certificate relates is not the subject of an approved voluntary management proposal within the meaning of the Contaminated Land Management Act 1997.

(d) The land to which this certificate relates is not subject to an ongoing maintenance order within the meaning of the Contaminated Land Management Act 1997.

(e) Council has not been provided with a site audit statement, within the meaning of the Contaminated Land Management Act 1997, for the land to which this certificate relates.

26. Site compatibility certificates and conditions for affordable rental housing

(1) Site Compatibility Certificate

Council is unaware if a current site compatibility certificate (affordable rental housing) has been issued in accordance with State Environmental Planning Policy (Affordable Rental Housing) 2009.

27. Nation Building and Jobs Plan (State Infrastructure Delivery) Act 2009

Council is unaware of whether an Order or an Authorisation has been issued under Section 23 and 24 of the Nation Building and Jobs Plan (State Infrastructure Delivery) Act 2009, for the carrying out of development on the land.

PART 2: ADDITIONAL MATTERS PROVIDED PURSUANT TO SECTION 149 (5)

The following information is provided in accordance with section 149(5) of the Environmental Planning and Assessment Act 1979. Section 149(6) of the Act states that a Council shall not incur any liability in respect of advice provided in good faith pursuant to sub-section 149(5). If this information is to be relied upon, it should be independently checked.

Maitland LEP 2011 makes the following special provisions in relation to the land

1. Preservation of trees or vegetation

Clause 5.9 in the Maitland Local Environmental Plan 2011 applies to the land. The objective of this clause is to preserve the amenity of the area, including biodiversity values, through the preservation of trees or other vegetation.

2. Development Consent

Council's records indicate that the land has not had any development consent granted within the five (5) years preceding the date of this certificate.

3. Draft DCP's

No Draft Development Control Plan is expressed to apply to the land subject to this certificate.

4. Suspension of covenants

Clause 1.9A in the Maitland Local Environmental Plan 2011 applies to all land within the Maitland Local Government Area. This clause suspends any agreement, covenant or other instrument that restricts the development of land that is permissible under the provisions of the Maitland Local Environmental Plan 2011 to the extent necessary to serve that purpose.

5. Filling of land

Earthworks (excavation and filling of land) require development consent. Clause 7.2 in the Maitland Local Environmental Plan 2011 applies to all land within the Maitland Local Government Area. Earthworks (defined as both excavation and filling of land) require development consent of Council unless the works are exempt development, ancillary to other development for which development consent is required or granted, or considered by Council to be of a minor nature.

6. Development in the vicinity of heritage items

Clause 5.10 in the Maitland Local Environmental Plan 2011 generally applies to all land in the Maitland Local Government Area, where the land is located in the vicinity of a heritage item or heritage conservation area. This clause requires a consent authority to consider the effect of the proposed development on the heritage significance of the item or area concerned, before granting development consent.

David Evans - General Manager

Per: _____

End of Certificate

S149 Planning Certificate

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979 (AS AMENDED)

maitland city council

APPLICANT	**Coffey Services Australia** **19 Warabrook Boulevard** **WARABROOK NSW 2304**	Certificate No Certificate Date Fee Paid Receipt No No. of Pages	**17/723** **09/03/2017** **133.00** **45097** **Page 1 of 8**
Your Reference	**ENAUWARA04770AB**		
PROPERTY	**LOT 2 DP718712** **803 NEW ENGLAND HIGHWAY** **LOCHINVAR**		
PARISH	**Gosforth**		
PROPERTY NO	**31929**		

IMPORTANT: Please read this certificate carefully.

This certificate contains important information about the land described above.

Please check for any item, which could be inconsistent with the proposed use or development of the land. If there is anything you do not understand, please contact the Council by phone on (02) 49349700, or personally at Council's office at 285-287 High Street Maitland.

The information provided in this certificate relates only to the land described above. If you require information about adjoining or nearby land, or about the Council's development policies or codes for the general area, contact Council's Planning & Environment Department.

All information provided is correct as at the date issued on this certificate. However, it is possible for changes to occur at any time after issue of this certificate. We recommend that you only rely upon a very recent certificate.

The following responses are based on the Council's records and / or information from sources outside the Council. The responses are provided with all due care and in good faith, however the Council cannot accept responsibility for any omission or inaccuracy arising from information outside the control of the Council.

Furthermore, while this certificate indicates the general effect of the zoning of the abovementioned land, it is suggested that the applicable planning instruments be further investigated to determine any additional requirements.

Copies of Maitland City Council's Local Environmental Planning Instrument, Development Control Plans and Policies are available for purchase from Council's Customer Service Centre.

285 – 287 High Street Maitland NSW 2320 | t02 4934 9700 f02 4933 3209 | info@maitland.nsw.gov.au maitland.nsw.gov.au DX21613 Maitland
All correspondence should be directed to : General Manager PO Box 220 Maitland NSW 2320

PART 1: MATTERS PROVIDED PURSUANT TO SECTION 149 (2)

1. Local Environmental Plans (LEP)

Maitland LEP 2011, published 16 December 2011, applies to the land.

2. Exhibited draft Local Environmental Plans

No draft Local Environmental Plans that have been on public exhibition under the Act are applicable to the land.

3. Development Control Plan prepared by Council

Maitland Development Control Plan 2011 applies to the land.

4. Development Control Plans prepared by the Director-General

The Council has not been notified of any Development Control Plan applying to the land that has been prepared by the Director-General under section 51A of the Act.

5. State Environmental Planning Policies

The Minister for Planning has notified that the following State Environmental Planning Policies shall be specified on certificates under Section 149 of the Environmental Planning and Assessment Act, 1979.

The land is affected by the following State Environmental Planning Policies:

State Environmental Planning Policy No. 21 - Caravan Parks

State Environmental Planning Policy No. 30 - Intensive Agriculture

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

State Environmental Planning Policy No. 36 - Manufactured Home Estates

State Environmental Planning Policy No. 44 - Koala Habitat Protection

State Environmental Planning Policy No. 50 - Canal Estate Development

State Environmental Planning Policy No. 55 - Remediation Of Land

State Environmental Planning Policy No. 64 - Advertising And Signage

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

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

State Environmental Planning Policy - Major Development 2005

State Environmental Planning Policy - State And Regional Development 2011

State Environmental Planning Policy - Affordable Rental Housing 2009

State Environmental Planning Policy - Building Sustainability Index: Basix 2004

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

State Environmental Planning Policy - Infrastructure 2007

State Environmental Planning Policy - Mining, Petroleum Production And Extractive Industries 2007

State Environmental Planning Policy - Rural Lands 2008

State Environmental Planning Policy - Housing For Seniors Or People With A Disability 2004

State Environmental Planning Policy - (Miscellaneous Consent Provisions) 2007

6. Draft State Environmental Planning Policies

No draft State Environmental Planning Policy(s) applying to the land has been publicised as referred to in section 39(2) of the Act.

7. Zoning and land use under relevant LEPs

Maitland LEP 2011, published 16 December 2011, identifies the zone applying to the land as:

R1 General Residential

The following development control table(s) give the objectives of the zone, the description of the zone and identify development allowed or prohibited in each zone. Development consent where required, must be obtained from the Council.

R1 General Residential

1) **Objectives of zone**

- To provide for the housing needs of the community.
- To provide for a variety of housing types and densities.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.

2) **Permitted without consent**

Home-based child care; Home occupations

3) **Permitted with consent**

Attached dwellings; Bed and breakfast accommodation; Boarding houses; Building identification signs; Business identification signs; Child care centres; Community facilities; Dwelling houses; Group homes; Home industries; Hostels; Hotel or motel accommodation; Multi dwelling housing; Neighbourhood shops; Places of public worship; Residential flat buildings; Respite day care centres; Roads; Semi-detached dwellings; Seniors housing; Serviced apartments; Shop top housing; Any other development not specified in item 2 or 4

4) **Prohibited**

Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Biosolids treatment facilities; Boat building and repair facilities; Boat launching ramps; Boat sheds; Camping grounds; Car parks; Caravan parks; Cemeteries; Charter and tourism boating facilities; Commercial premises; Correctional centres; Crematoria; Depots; Eco-tourist facilities; Entertainment facilities; Extractive industries; Farm buildings; Forestry; Freight transport facilities; Function centres; Heavy industrial storage establishments; Helipads; Highway service centres; Home occupations (sex services); Industrial retail outlets; Industrial training facilities; Industries; Information and education facilities; Jetties; Marinas; Mooring pens; Moorings; Mortuaries; Open cut mining; Passenger transport facilities; Public administration buildings; Recreation facilities (indoor); Recreation facilities (major); Registered clubs; Research stations; Restricted premises; Rural industries; Rural workers dwellings; Service stations; Sewerage treatment plants; Sex services premises; Signage; Storage premises; Tourist and visitor accommodation; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Veterinary hospitals; Warehouse or distribution centres; Waste or resource management facilities; Water recreation structures; Water recycling facilities; Wharf or boating facilities; Wholesale supplies

8. Land dimensions to permit the erection of a dwelling-house on the land

Maitland LEP 2011 does not contain a development standard specifying the land dimensions required to permit the erection of a dwelling-house on the land.

9. Critical Habitat

No Local Environmental Plan or draft Local Environmental Plan identifies the land as including or comprising critical habitat.

10. Conservation Area/Item of Environmental Heritage

The land is not in a Heritage Conservation Area. The land does not contain an item of Environmental Heritage.

11. Directions Under Part 3A

There is **no** direction by the Minister 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 (other than a project of a class prescribed by the regulations) of the Act does not have effect.

12. Coastal Protection

The Council has not received any notification from the Department of Services, Technology and Administration that the land is affected by the operation of section 38 or 39 of the Coastal Protection Act 1979.

13. Mine Subsidence Compensation Act 1961

The land has not been proclaimed to be within a Mine Subsidence District under the meaning of section 15 of the Mine Subsidence Compensation Act 1961.

14. Road widening or realignment

The land is not affected by any road widening or re-alignment under:

(a) Division 2 of Part 3 of the Roads Act 1993: or (b) any environmental planning instrument; (c) any resolution of the council.

15. Council and other public authority policies on hazard risk restrictions

All land within the Maitland Local Government Area has the potential to contain acid sulfate soils. Clause 7.1 in the Maitland Local Environmental Plan 2011 generally applies. Development consent is required where works described in the Table to this clause are proposed on land shown on the Maitland Local Environmental Plan 2011 Acid Sulfate Soils Map as being of the class specified for those works.

16. Bushfire Prone Land

The land is not mapped as 'bushfire prone land'.

17. Flood Related Development Controls

Development on this land or part of this land for the purposes of dwelling houses, attached dwellings, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) **is not** subject to flood related development controls contained within cl. 7.3 of the Maitland Local Environmental Plan 2011 and s. B3 of the Maitland Development Control Plan 2011.

Development on this land or part of this land for any other purpose **is not** subject to flood related development controls contained within cl. 7.3 of the Maitland Local Environmental Plan 2011 and s. B3 of the Maitland Development Control Plan 2011.

Information given in relation to flooding is based upon Councils adopted 1:100 ARI (Average Recurrent Interval) flood event.

The Maitland Local Environmental Plan 2011 identifies the flood planning level (FPL) as the level of a 1:100 ARI flood event plus 0.5m freeboard.

18. Land reserved for acquisition

No environmental planning instrument, deemed environmental planning instrument or draft environmental planning instrument applying to the land provides for the acquisition of the land by a public authority, as referred to in section 27 of the Act.

19. Contribution Plans

The following contribution plan(s) apply to the land:

- Maitland S94A Levy Contributions Plan 2006

- Maitland City Wide Section 94 Contributions Plan 2016

- Lochinvar S94 Contribution Plan 2013

Contributions plans may be inspected and purchased at Council's Customer Service Centre.

20. Property Vegetation Plans

The Council has not received any notification from Hunter Local Land Services that the land is affected by a property vegetation plan under the Native Vegetation Act 2003.

21. Order under Trees (Disputes Between Neighbours) Act 2006.

Council has not received notification from the Land and Environment Court of New South Wales that the land is affected by an Order Under Trees (Disputes Between Neighbours) Act 2006.

22. Conditions Affecting Seniors Housing

1) **Site Compatibility Certificate**

Council is unaware of whether a current site compatibility certificate issued under clause 25 of the State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 has been issued for the land.

2) **Conditions of Development Consent since 11 October 2007**

No development consent has been granted for the development permitted by State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 after 11 October 2007.

23. Site Compatibility Certificates for Infrastucture

Council is unaware of whether a valid site compatibility certificate has been issued under clause 19 of State Environmental Planning Policy (Infrastructure) 2007 for the land.

24. Complying Development

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

Complying development under the **Rural Housing Code** may not be carried out on the land as it is not within an applicable zone.

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

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

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

Complying development under the **Commercial and Industrial (New Buildings and Additions) Code** may not be carried out on the land as it is not within an applicable zone.

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

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

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

Note: Despite the above provisions, if only part of a lot is subject to an exclusion or exemption under Clause 1.17A or Clause 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) Amendment (Commercial and Industrial Development and Other Matters) 2013, complying development may be carried out on that part of the lot that is not affected by the exclusion or exemption.

25. Contaminated Land

(a) The land to which this certificate relates is not significantly contaminated land within the meaning of the Contaminated Land Management Act 1997.

(b) The land to which this certificate relates is not subject to a management order within the meaning of the Contaminated Land Management Act 1997.

(c) The land to which this certificate relates is not the subject of an approved voluntary management proposal within the meaning of the Contaminated Land Management Act 1997.

(d) The land to which this certificate relates is not subject to an ongoing maintenance order within the meaning of the Contaminated Land Management Act 1997.

(e) Council has not been provided with a site audit statement, within the meaning of the Contaminated Land Management Act 1997, for the land to which this certificate relates.

26. Site compatibility certificates and conditions for affordable rental housing

(1) Site Compatibility Certificate

Council is unaware if a current site compatibility certificate (affordable rental housing) has been issued in accordance with State Environmental Planning Policy (Affordable Rental Housing) 2009.

27. Nation Building and Jobs Plan (State Infrastructure Delivery) Act 2009

Council is unaware of whether an Order or an Authorisation has been issued under Section 23 and 24 of the Nation Building and Jobs Plan (State Infrastructure Delivery) Act 2009, for the carrying out of development on the land.

PART 2: ADDITIONAL MATTERS PROVIDED PURSUANT TO SECTION 149 (5)

The following information is provided in accordance with section 149(5) of the Environmental Planning and Assessment Act 1979. Section 149(6) of the Act states that a Council shall not incur any liability in respect of advice provided in good faith pursuant to sub-section 149(5). If this information is to be relied upon, it should be independently checked.

Maitland LEP 2011 makes the following special provisions in relation to the land

1. Preservation of trees or vegetation

Clause 5.9 in the Maitland Local Environmental Plan 2011 applies to the land. The objective of this clause is to preserve the amenity of the area, including biodiversity values, through the preservation of trees or other vegetation.

2. Development Consent

Council's records indicate that the land has not had any development consent granted within the five (5) years preceding the date of this certificate.

3. Draft DCP's

No Draft Development Control Plan is expressed to apply to the land subject to this certificate.

4. Suspension of covenants

Clause 1.9A in the Maitland Local Environmental Plan 2011 applies to all land within the Maitland Local Government Area. This clause suspends any agreement, covenant or other instrument that restricts the development of land that is permissible under the provisions of the Maitland Local Environmental Plan 2011 to the extent necessary to serve that purpose.

5. Filling of land

Earthworks (excavation and filling of land) require development consent. Clause 7.2 in the Maitland Local Environmental Plan 2011 applies to all land within the Maitland Local Government Area. Earthworks (defined as both excavation and filling of land) require development consent of Council unless the works are exempt development, ancillary to other development for which development consent is required or granted, or considered by Council to be of a minor nature.

6. Development in the vicinity of heritage items

Clause 5.10 in the Maitland Local Environmental Plan 2011 generally applies to all land in the Maitland Local Government Area, where the land is located in the vicinity of a heritage item or heritage conservation area. This clause requires a consent authority to consider the effect of the proposed development on the heritage significance of the item or area concerned, before granting development consent.

David Evans - General Manager

Per: 

End of Certificate

Appendix F – NSW EPA Records

Search results

Your search for: LGA: Maitland City Council
Notice Type: Preliminary Investigation Order

Matched 4 notices relating to 2 sites.

Search Again Refine Search

Suburb	Address	Site Name	Notices related to this site
EAST MAITLAND	Corner Melbourne Street and Brisbane STREET	Former Gasworks Site	2 former
MAITLAND	Charles STREET	Maitland Gasworks	2 current

Page 1 of 1

5 April 2017

Appendix G – Data Validation Reports

DATA COMPLETENESS

Field Considerations

	Yes / No	Comment
Were all critical locations sampled?	Yes	
Were all critical depths sampled?	Yes	
Were the SOPs appropriate and complied with?	Yes	
Was the sampler adequately experienced?	Yes	
Was the field documentation complete?	Yes	
Is a copy of the signed chain of custody form for each batch of samples included?	Yes	

Laboratory Considerations

	Yes / No	Comment
Were all critical samples analysed according to sampling plan?	Yes	
Were analytes analysed as per sampling plan?	Yes	
Were the laboratory methods appropriate?	Yes	
Were the laboratory methods adopted NATA endorsed?	Yes	
Was the NATA Seal on the laboratory reports?	Yes	
Were the laboratory reports signed by an authorised person?	Yes	
Were the laboratory PQLs below the criteria?	Yes	

Was sample documentation complete?	Yes	
Were sample holding times complied with?	No	Holding times for phenoxy herbicides and pH were exceeded. As phenoxy herbicides were not recorded above laboratory LORs and pH was used as an indicator of water quality and not considered a COC, Coffey considers that these exceedences have not adversely affect data usability.

COMPLETENESS CONCLUSION

	Yes / No	Comment
Was data adequately complete?	Yes	

DATA COMPARABILITY

Field considerations

	Yes / No	Comment
Was there more than one sampling round?	No	
Were the same sampling methodology and SOPs used for all sampling?	Yes	
Was all sampling undertaken by the same sampler?	Yes	
Were sample containers, preservation, filtering the same?	No	Different sample containers and preservation used for soil and surface water samples. Samples were collected and preserved based on Coffey SOPs and accepted industry practice.
Could climatic conditions (temperature, rainfall, wind) have influenced data comparability?	Yes	Surface water samples may have been affected by climatic conditions.
Were the same types of samples collected (filtered, size fractions etc) for each media?	Yes	

Laboratory Considerations

	Yes / No	Comment
Were the same analytical methods used (including clean up)?	No	Different laboratory methods were used for soil and surface water samples. The laboratory methods used were NATA-endorsed.
Were the PQLs the same?	No	Different PQLs used by the primary and secondary laboratories.
Were the same laboratories used?	No	Eurofins-MGT was used as the primary laboratory. ALS was used as the secondary laboratory.
Were the units reported the same?	No	Soil samples were reported in mg/kg. Surface water samples were reported in mg/L, µg/L, pH units and µS/cm.

COMPARABILITY CONCLUSION

	Yes / No	Comment
Was data adequately comparable?	Yes	

DATA REPRESENTATIVENESS

Field Considerations

	Yes / No	Comment
Was appropriate media sampled?	Yes	
Was media identified sampled?	Yes	
Were the samples properly and adequately preserved? This includes keeping the samples chilled, where applicable.	Yes	
Were the samples in proper custody between the field and reaching the laboratory?	Yes	
Were the samples received by the laboratory in good condition?	Yes	

Laboratory Considerations

	Yes / No	Comment
Were all samples analysed according to SAQP?	NA	There was no SAQP for this assessment.

REPRESENTATIVENESS CONCLUSION

	Yes / No	Comment
Was data adequately representative?	Yes	

DATA PRECISION AND ACCURACY

Field considerations

	Yes / No	Comment
Were the SOPs appropriate and complied with?	Yes	Based on available Coffey Environments Standard Operating Procedures.

Laboratory Considerations for Soil

	Metals	TRH	BTEX	PAH	OCP	OPP	Herbicides
Primary	14	8	8	8	14	14	14
Field QA/QC							
Intralab Dup	1, 7%	1, 12.5%	1, 12.5%	1, 12.5%	1, 7%	1; 7%	0
Interlab Dup	1, 7%	1, 12.5%	1, 12.5%	1, 12.5%	1, 7%	1; 7%	0
Trip Spike	0	0	0	0	0	0	0
Trip Blank	NA	1	1	NA	0	NA	NA
Wash Blanks	0	1	1	1	0	0	0
LAB QA/QC							
Lab Blanks	1	1	1	1	1	1	1
Lab Dups	2	2	2	2	2	2	2
Matrix Spikes	1	1	1	1	1	1	1
Lab Control	1	1	1	1	1	1	1
Surrogate	0	0	1	2	2	1	1

Laboratory Considerations for Water

	Metals	TRH	BTEX	PAH	OCP	OPP	Herbicides
Primary	3	0	0	0	3	3	3
Field QA/QC							
Intralab Dup	1, 33%	0	0	0	1, 33%	1, 33%	0
Interlab Dup	0	0	0	0	0	0	0
Trip Spike	0	0	0	NA	0	NA	0
Trip Blank	NA	1	1	NA	0	NA	NA
Wash Blanks	0	1	1	1	0	0	0
LAB QA/QC							
Lab Blanks	1	1	1	1	1	1	1
Lab Dups	2	2	2	2	2	2	0
Matrix Spikes	1	1	1	1	1	1	0
Lab Control	1	1	1	1	1	1	1
Surrogate	0	0	1	2	2	0	1

	Yes / No	Comment
Field QA/QC		
Were an adequate number of field duplicates analysed?	Yes	
Were the RPDs of the field duplicates within control limits?	No	RPD's in soil for nickel (SS2 and QC3) exceeded control limit of 50%. This is inferred to be due to heterogeneity of the material sampled.
Were an adequate number of trip blanks analysed?	Yes	
Were the trip blanks free of contaminants	NA	
Were an adequate number of trip spikes analysed?	No	Given the low potential for volatile contamination to be present, trip spikes were not considered to be required.
Were the trip spikes recoveries within control limits?	NA	
Were an adequate number of wash blanks analysed?	Yes	
Were the wash blanks free of contaminants?	Yes	
Lab QA/QC		
Were an adequate number of laboratory blank samples analysed?	Yes	
Were the blanks free of contaminants?	Yes	
Were an adequate number of laboratory matrix spikes and laboratory control samples analysed?	Yes	
Were an adequate number of surrogate spike samples analysed?	Yes	

Were the spikes recoveries within control limits?	Yes	
Were an adequate number of laboratory duplicates analysed?	Yes	
Were the laboratory duplicate RPDs within control limits?	No	Duplicate RPDs for cadmium were recorded outside the control limits, but passed Eurofins-MGT's Acceptance Criteria as stipulated in their SOP-05.

PRECISION AND ACCURACY CONCLUSION

	Yes / No	Comment
Was soil data adequately precise?	Yes	
Was soil data adequately accurate?	Yes	
Was water data adequately precise?	Yes	
Was water data adequately accurate?	Yes	

Table F1: Laboratory Methodologies (Eurofins-MGT) - Soil

Analysis	Method Based On	NATA Registered
BTEX	Based on TRH C6-C40 – LTM-ORG-2010	Yes
TPH C6-C36	Based on TRH C6-C36 – LTM-ORG-2010	Yes
TPH C6-C40	Based on TRH C6-C40 - LTM-ORG-2010	Yes
PAH	Based on USEPA 8270	Yes
Metals	Based on USEPA 6010/6020	Yes
Mercury	Based on USEPA 7470/71	Yes
OCPs	Based on USEPA 8081 Organochlorine Pesticides	Yes
OPPs	Based on USEPA 8270 Organophosphorus Pesticides	Yes
Phenoxy Herbicides	Based on Method MGT 530	Yes

Table F2: Holding Times (Eurofins-MGT) - Soil

Soil Analysis	Holding Time	Maximum Time Between Sampling and Extraction	Holding Times Met
BTEX	14 days	1 day	Yes
TPH C6-C36	14 days	1 day	Yes
TPH C6-C40	14 days	1 day	Yes
PAH	14 days	1 day	Yes
Metals	28 days	1 day	Yes
OCPs	14 days	1 day	Yes
OPPs	14 days	1 day	Yes
Phenoxy	14 days	19 days	No

Herbicides			

Table F3: Soil Laboratory Methodologies (ALS)

Analysis	Method Based On	NATA Registered
Soil		
TPH C6-C9/BTEX	ALS Method EP080	Yes
TPH C10-C36	ALS Method EP071	Yes
PAH	ALS Method EP075(SIM)	Yes
Metals	ALS Method EG005T	Yes
Mercury	ALS Method EG035T	Yes

Table F4: Soil Holding Times (ALS)

Soil Analysis	Holding Time	Maximum Time Between Sampling and Extraction	Holding Times Met
TPH C6-C9/BTEX	14 days	1 day	Yes
TPH C10-C36	14 days	1 day	Yes
PAH	14 days	2 days	Yes
Metals	28 days	2 days	Yes

Table F5: Water Holding Times Eurofins MGT

Analysis	Method Based On	NATA Registered
BTEX	Based on TRH C6-C40 – LTM-ORG-2010	Yes
TPH C6-C36	Based on TRH C6-C36 – LTM-ORG-2010	Yes
TPH C6-C40	Based on TRH C6-C40 - LTM-ORG-2010	Yes
Volatile Organics	Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS	Yes

PAH	Based on USEPA 8270	Yes
Metals	Based on USEPA 6010/6020	Yes
Mercury	Based on USEPA 7470/71	Yes
OCPs	Based on USEPA 8081 Organochlorine Pesticides	Yes
OPPs	Based on USEPA 8270 Organophosphorus Pesticides	Yes
pH	Based on APHA 2510	Yes
Electrical conductivity	Based on APHA 4500	Yes
Phenoxy Herbicides	Based on Method MGT 530	Yes

Table F6: Holding Times (Eurofins-MGT) - Water

Soil Analysis	**Holding Time**	**Maximum Time Between Sampling and Extraction**	**Holding Times Met**
BTEX	14 days	1 day	Yes
TPH C6-C36	7 days	7days	Yes
TPH C6-C40	7 days	7 days	Yes
Volatile Organics	7 days	1 day	Yes
PAH	7 days	8 days	Yes
Metals	28 days	2 days	Yes
OCPs	7 days	7 days	Yes
OPPs	7 days	7 days	Yes
pH	6 hours	1 day	No
Electrical conductivity	28 days	1 day	Yes
Phenoxy Herbicides	14 days	19 days	No

A.C.N. 090 522 759 A.B.N. 45 090 522 759

QA/QC DATA VALIDATION REPORT
Job No: 754-NTLEN202989
Eurofins Report: 539344
ALS: EM1703497

I. SAMPLE HANDLING

	Yes	No (Comment below)
1. Were the sample **holding times** met?	☒	☐
2. Were the samples in **proper custody** between the field and reaching the laboratory?	☒	☐
3. Were the samples **properly and adequately** preserved? *This includes keeping the samples chilled, where applicable.*	☒	☐
4. Were the samples received by the laboratory in good condition?	☒	☐

COMMENTS:
Nil

Sample Handling was: ☒Satisfactory ☐ Unsatisfactory
☐ Partially Satisfactory

A.C.N. 090 522 759 A.B.N. 45 090 522 759

QA/QC DATA VALIDATION REPORT
Job No: 754-NTLEN202989
Eurofins Report: 539344
ALS: EM1703497

II PRECISION/ACCURACY ASSESSMENT

	Yes	No (Comment below)
1. Was a NATA registered laboratory used?	☒	☐
2. Did the laboratory perform the requested tests?	☒	☐
3. Were the laboratory methods adopted NATA endorsed?	☒	☐
4. Were the appropriate test procedures followed?	☒	☐
5. Were the reporting limits satisfactory?	☒	☐
6. Was the NATA Seal on the reports?	☒	☐
7. Were the reports signed by an authorised person?	☒	☐

COMMENTS:

Nil

Precision/Accuracy of the Laboratory Report	☒ Satisfactory	☐ Unsatisfactory
	☐ Partially Satisfactory	

QA/QC DATA VALIDATION REPORT
Job No: 754-NTLEN202989
Eurofins Report: 539344
ALS: EM1703497

III. FIELD QA/QC

1.	Number of Samples Analysed	17
2.	Number of Days of Sampling:	1
3.	Number of Sampling Events:	1

4. Number and Type of QA/QC Samples Collected:

	SOIL	WATER
Field Duplicates (at least 1 in 10 samples)	3	N/A
Trip Blanks (at least 1/day or sampling event)	0	N/A
Wash Blanks (at least 1/day/matrix/equipment)	0	1
Other (Field Blanks, Trip Spike, etc.)	0	N/A

5. FIELD DUPLICATES

	Yes	No (Comment below)
A. Were an Adequate Number of field duplicates collected?	☒	☐
B. Were RPDs within Control Limits?		
a. Organics (100% (5-10 x EQL); 50% (10-30 x EQL); 30% (> 30 x EQL))	☒	☐
b. Metals/Inorganics (100% (5-10 x EQL); 50% (10-30 x EQL); 30% (> 30 x EQL))	☐	☒

COMMENTS:

RPDs for nickel and zinc exceeded the control limit of 30% between primary sample SS14 and triplicate sample QC8. This is inferred to be due to sample heterogeneity.

6. TRIP BLANKS

	Yes	N/A (Comment below)
A. Were an Adequate Number of trip blanks collected?	☐	☒
B. Were the Trip Blanks free of contaminants? (If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals.)	☐	☒

7. RINSATE SAMPLES

	Yes	N/A (Comment below)
A. Were an adequate number of rinsate samples collected?	☒	☐
B. Were the rinsate samples free of contaminants? (If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals.)	☒	☐

COMMENTS:

As volatile contamination was not anticipated to be present at the site, trip spikes and blanks were considered not to be required for this assessment.

Field QA/QC was:	☒ Satisfactory	☐ Unsatisfactory
	☐ Partially Satisfactory	

IV LABORATORY INTERNAL QUALITY CONTROL PROCEDURES

1. Type of QA/QC Samples

	Yes	No
Laboratory Blanks/Reagent Blanks (at least 1 per batch)	☒	☐
Laboratory Duplicates (at least 1 per batch or 1 per 10 samples whichever is the smaller)	☒	☐
Matrix Spikes/Matrix Spike Duplicates (1 for each soil type)	☒	☐
Laboratory Control Spike	☒	☐
Surrogate (where appropriate)*	☒	☐

*Number of surrogates spikes carried out on each sample

	Yes	**No** (Comment below)
2 Were the laboratory blanks/reagents blanks free of contamination?	☒	☐
3. Were the spike recoveries within laboratory control limits?		
a. Organics	☒	☐
b. Metals/Inorganic	☐	☒
4. Were the RPDs of the laboratory duplicates within control limits?	☒	☐
5. Were the surrogate recoveries within control limits?	☒	☐

COMMENTS:

A matrix spike recovery of 133% for Lead was recorded. The laboratory code Q08 was quoted, which states: *"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."*

The laboratory internal QA/QC was:	☒ Satisfactory	☐ Unsatisfactory
	☐ Partially Satisfactory	

V. DATA USABILITY

1. Data Directly Usable ☒
2. Data Usable with the following corrections/modifications (see comment below) ☐
3. Data Not Usable. ☐

COMMENTS:

None.

Appendix H – Laboratory Reports and Chain of Custody Documentation

eurofins | mgt

Certificate of Analysis

Coffey Environments Pty Ltd Newcastle
Lot 101, 19 Warabrook Boulevard
Warabrook
NSW 2304

NATA WORLD RECOGNISED ACCREDITATION

NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Attention: **Libby Betz**

Report **444435-S**
Project name WINDERS LANE
Project ID ENAUWARA04581AA
Received Date Jan 15, 2015

Client Sample ID			**SS1**	**SS2**	**SS3**	**SS4**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M15-Ja04883**	**M15-Ja04884**	**M15-Ja04885**	**M15-Ja04886**
Date Sampled			**Jan 14, 2015**	**Jan 14, 2015**	**Jan 14, 2015**	**Jan 14, 2015**
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	%	101	89	-	-
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	-	-
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	-	-

Client Sample ID			SS1	SS2	SS3	SS4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M15-Ja04883	M15-Ja04884	M15-Ja04885	M15-Ja04886
Date Sampled			Jan 14, 2015	Jan 14, 2015	Jan 14, 2015	Jan 14, 2015
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
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	%	93	97	-	-
p-Terphenyl-d14 (surr.)	1	%	99	109	-	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	143	133	143	129
Tetrachloro-m-xylene (surr.)	1	%	145	129	138	149
Organophosphorous Pesticides						
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl azinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			SS1	SS2	SS3	SS4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M15-Ja04883	M15-Ja04884	M15-Ja04885	M15-Ja04886
Date Sampled			Jan 14, 2015	Jan 14, 2015	Jan 14, 2015	Jan 14, 2015
Test/Reference	LOR	Unit				
Organophosphorous Pesticides						
Naled	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	101	103	97	92
Heavy Metals						
Arsenic	2	mg/kg	3.8	3.5	3.1	3.4
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	82	66	78	77
Copper	5	mg/kg	32	53	28	23
Lead	5	mg/kg	< 5	< 5	< 5	< 5
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	54	36	50	29
Zinc	5	mg/kg	40	33	39	34
% Moisture	0.1	%	32	32	33	35

Client Sample ID			SS5	SS6	SS7	SS8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M15-Ja04887	M15-Ja04888	M15-Ja04889	M15-Ja04890
Date Sampled			Jan 14, 2015	Jan 14, 2015	Jan 14, 2015	Jan 14, 2015
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 40	-
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	-
TRH C15-C28	50	mg/kg	< 50	< 50	68	-
TRH C29-C36	50	mg/kg	< 50	< 50	170	-
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	240	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.2	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.2	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.2	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.4	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.2	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.6	-
4-Bromofluorobenzene (surr.)	1	%	108	103	105	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	[G01]< 1	-
TRH C6-C10	20	mg/kg	< 20	< 20	[G01]< 40	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	[G01]< 40	-
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	180	-
TRH >C34-C40	100	mg/kg	< 100	< 100	130	-

Client Sample ID			SS5	SS6	SS7	SS8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M15-Ja04887	M15-Ja04888	M15-Ja04889	M15-Ja04890
Date Sampled			Jan 14, 2015	Jan 14, 2015	Jan 14, 2015	Jan 14, 2015
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	89	100	121	-
p-Terphenyl-d14 (surr.)	1	%	87	100	113	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	131	128	128	127
Tetrachloro-m-xylene (surr.)	1	%	143	143	125	97

Client Sample ID			SS5	SS6	SS7	SS8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M15-Ja04887	M15-Ja04888	M15-Ja04889	M15-Ja04890
Date Sampled			Jan 14, 2015	Jan 14, 2015	Jan 14, 2015	Jan 14, 2015
Test/Reference	LOR	Unit				
Organophosphorous Pesticides						
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl azinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Naled	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	83	88	104	118
Heavy Metals						
Arsenic	2	mg/kg	2.2	3.0	3.0	2.8
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	87	77	91	97
Copper	5	mg/kg	38	41	38	44
Lead	5	mg/kg	< 5	< 5	< 5	< 5
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	46	43	50	53
Zinc	5	mg/kg	31	29	39	36
% Moisture	0.1	%	25	31	32	37

Client Sample ID			SS9	SS10	SS11	POND 1 SED1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M15-Ja04891	M15-Ja04892	M15-Ja04893	M15-Ja04897
Date Sampled			Jan 14, 2015	Jan 14, 2015	Jan 14, 2015	Jan 14, 2015
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	-
TRH C15-C28	50	mg/kg	< 50	110	< 50	-
TRH C29-C36	50	mg/kg	81	160	54	-
TRH C10-36 (Total)	50	mg/kg	81	270	54	-

Client Sample ID			SS9	SS10	SS11	POND 1 SED1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M15-Ja04891	M15-Ja04892	M15-Ja04893	M15-Ja04897
Date Sampled			Jan 14, 2015	Jan 14, 2015	Jan 14, 2015	Jan 14, 2015
Test/Reference	LOR	Unit				
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	%	77	82	65	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	-
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	220	< 100	-
TRH >C34-C40	100	mg/kg	< 100	110	< 100	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	91	112	104	-
p-Terphenyl-d14 (surr.)	1	%	113	108	113	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			SS9	SS10	SS11	POND 1 SED1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M15-Ja04891**	**M15-Ja04892**	**M15-Ja04893**	**M15-Ja04897**
Date Sampled			**Jan 14, 2015**	**Jan 14, 2015**	**Jan 14, 2015**	**Jan 14, 2015**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	130	102	93	120
Tetrachloro-m-xylene (surr.)	1	%	90	100	100	104
Organophosphorous Pesticides						
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl azinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Naled	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	88	95	109	88
Heavy Metals						
Arsenic	2	mg/kg	2.3	2.5	2.2	5.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	95	110	77	64
Copper	5	mg/kg	39	36	27	26
Lead	5	mg/kg	< 5	< 5	< 5	< 5
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	62	68	36	57
Zinc	5	mg/kg	36	48	49	39
% Moisture	0.1	%	36	33	28	29

Client Sample ID			POND 2 SED2	POND 3 SED3	QC2
Sample Matrix			Soil	Soil	Soil
Eurofins | mgt Sample No.			M15-Ja04898	M15-Ja04899	M15-Ja04901
Date Sampled			Jan 14, 2015	Jan 14, 2015	Jan 14, 2015
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	%	-	-	51
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
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	%	-	-	91
p-Terphenyl-d14 (surr.)	1	%	-	-	96
Organochlorine Pesticides					
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05

Client Sample ID			POND 2 SED2	POND 3 SED3	QC2
Sample Matrix			Soil	Soil	Soil
Eurofins | mgt Sample No.			M15-Ja04898	M15-Ja04899	M15-Ja04901
Date Sampled			Jan 14, 2015	Jan 14, 2015	Jan 14, 2015
Test/Reference	LOR	Unit			
Organochlorine Pesticides					
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	103	109	125
Tetrachloro-m-xylene (surr.)	1	%	101	101	86
Organophosphorous Pesticides					
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Methyl azinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Naled	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	105	115	95
Heavy Metals					
Arsenic	2	mg/kg	2.7	2.9	3.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	90	78	79
Copper	5	mg/kg	41	34	32
Lead	5	mg/kg	< 5	< 5	< 5
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	53	120	51
Zinc	5	mg/kg	35	24	39

Client Sample ID			POND 2 SED2	POND 3 SED3	QC2
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M15-Ja04898**	**M15-Ja04899**	**M15-Ja04901**
Date Sampled			**Jan 14, 2015**	**Jan 14, 2015**	**Jan 14, 2015**
Test/Reference	LOR	Unit			
% Moisture	0.1	%	44	43	33

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	Jan 16, 2015	14 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
BTEX	Melbourne	Jan 16, 2015	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 16, 2015	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Eurofins | mgt Suite 10			
Polycyclic Aromatic Hydrocarbons	Melbourne	Jan 16, 2015	14 Day
- Method: USEPA 8270 Polycyclic Aromatic Hydrocarbons			
Organochlorine Pesticides	Melbourne	Jan 16, 2015	14 Day
- Method: USEPA 8081 Organochlorine Pesticides			
Organophosphorous Pesticides	Melbourne	Jan 16, 2015	14 Day
- Method: USEPA 8270 Organophosphorus Pesticides			
Metals M8	Melbourne	Jan 16, 2015	28 Day
- Method: USEPA 6010/6020 Heavy Metals & USEPA 7470/71 Mercury			
% Moisture	Melbourne	Jan 15, 2015	14 Day
- Method: LTM-GEN-7080 Moisture			

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: Coffey Environments P/L N'castle
Address: Lot 101, 19 Warabrook Boulevard
Warabrook
NSW 2304

Project Name: WINDERS LANE
Project ID: ENAUWARA04581AA

Order No.:
Report #: 444435
Phone: 02 4016 2300
Fax: 02 4016 2380

Received: Jan 15, 2015 1:25 PM
Due: Jan 22, 2015
Priority: 5 Day
Contact Name: Libby Betz

Eurofins | mgt Client Manager: Mary Makarios

Sample Detail					% Moisture	Conductivity (at 25°C)	pH	Organochlorine Pesticides	Organophosphorous Pesticides	Metals M8	Eurofins | mgt Suite 10	BTEX and Volatile TRH
Laboratory where analysis is conducted												
Melbourne Laboratory - NATA Site # 1254 & 14271					X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794												
External Laboratory												
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
SS1	Jan 14, 2015		Soil	M15-Ja04883	X						X	
SS2	Jan 14, 2015		Soil	M15-Ja04884	X						X	
SS3	Jan 14, 2015		Soil	M15-Ja04885	X			X	X	X		
SS4	Jan 14, 2015		Soil	M15-Ja04886	X			X	X	X		
SS5	Jan 14, 2015		Soil	M15-Ja04887	X						X	
SS6	Jan 14, 2015		Soil	M15-Ja04888	X						X	
SS7	Jan 14, 2015		Soil	M15-Ja04889	X						X	
SS8	Jan 14, 2015		Soil	M15-Ja04890	X			X	X	X		
SS9	Jan 14, 2015		Soil	M15-Ja04891	X						X	

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Laboratory where analysis is conducted												
Melbourne Laboratory - NATA Site # 1254 & 14271					X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794												
External Laboratory												
SS10	Jan 14, 2015		Soil	M15-Ja04892	X						X	
SS11	Jan 14, 2015		Soil	M15-Ja04893	X						X	
POND 1 SW1	Jan 14, 2015		Water	M15-Ja04894		X	X	X	X	X		
POND 2 SW2	Jan 14, 2015		Water	M15-Ja04895		X	X	X	X	X		
POND 3 SW3	Jan 14, 2015		Water	M15-Ja04896		X	X	X	X	X		
POND 1 SED1	Jan 14, 2015		Soil	M15-Ja04897	X			X	X	X		
POND 2 SED2	Jan 14, 2015		Soil	M15-Ja04898	X			X	X	X		
POND 3 SED3	Jan 14, 2015		Soil	M15-Ja04899	X			X	X	X		
QC1	Jan 14, 2015		Water	M15-Ja04900		X	X	X	X	X		
QC2	Jan 14, 2015		Soil	M15-Ja04901	X						X	

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Address:	Lot 101, 19 Warabrook Boulevard Warabrook NSW 2304	**Report #:**	444435	**Due:**	Jan 22, 2015
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Project Name:	WINDERS LANE				
Project ID:	ENAUWARA04581AA				

Eurofins | mgt Client Manager: Mary Makarios

Sample Detail					% Moisture	Conductivity (at 25°C)	pH	Organochlorine Pesticides	Organophosphorous Pesticides	Metals M8	Eurofins | mgt Suite 10	BTEX and Volatile TRH
Laboratory where analysis is conducted												
Melbourne Laboratory - NATA Site # 1254 & 14271					X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794												
External Laboratory												
QC4	Jan 14, 2015		Water	M15-Ja04902							X	
QC5	Jan 14, 2015		Water	M15-Ja04903								X

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. 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.

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

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

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. 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.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
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 20-130%.

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, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene 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 Arochlor 1260 in Matrix Spikes and LCS's.
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 RPD's 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 C6-C10 less BTEX (F1)	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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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							
Organophosphorous Pesticides							
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl azinphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Naled	mg/kg	< 0.5			0.5	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	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	%	100			70-130	Pass	
TRH C10-C14	%	114			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	123			70-130	Pass	
Toluene	%	121			70-130	Pass	
Ethylbenzene	%	118			70-130	Pass	
m&p-Xylenes	%	112			70-130	Pass	
Xylenes - Total	%	114			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	95			75-125	Pass	
TRH C6-C10	%	95			70-130	Pass	
TRH >C10-C16	%	116			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	93			70-130	Pass	
Acenaphthylene	%	98			70-130	Pass	
Anthracene	%	96			70-130	Pass	
Benz(a)anthracene	%	93			70-130	Pass	
Benzo(a)pyrene	%	88			70-130	Pass	
Benzo(b&j)fluoranthene	%	103			70-130	Pass	
Benzo(g.h.i)perylene	%	87			70-130	Pass	
Benzo(k)fluoranthene	%	80			70-130	Pass	
Chrysene	%	91			70-130	Pass	
Dibenz(a.h)anthracene	%	89			70-130	Pass	
Fluoranthene	%	95			70-130	Pass	
Fluorene	%	93			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	87			70-130	Pass	
Naphthalene	%	95			70-130	Pass	
Phenanthrene	%	95			70-130	Pass	
Pyrene	%	93			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4.4'-DDD	%	116			70-130	Pass	
4.4'-DDE	%	127			70-130	Pass	
4.4'-DDT	%	122			70-130	Pass	
a-BHC	%	112			70-130	Pass	
Aldrin	%	108			70-130	Pass	
b-BHC	%	106			70-130	Pass	
d-BHC	%	112			70-130	Pass	
Dieldrin	%	110			70-130	Pass	
Endosulfan I	%	96			70-130	Pass	
Endosulfan II	%	118			70-130	Pass	
Endosulfan sulphate	%	117			70-130	Pass	
Endrin	%	117			70-130	Pass	
Endrin aldehyde	%	111			70-130	Pass	
Endrin ketone	%	115			70-130	Pass	
g-BHC (Lindane)	%	110			70-130	Pass	
Heptachlor	%	110			70-130	Pass	
Heptachlor epoxide	%	107			70-130	Pass	
Hexachlorobenzene	%	102			70-130	Pass	
Methoxychlor	%	111			70-130	Pass	
LCS - % Recovery							
Organophosphorous Pesticides							
Diazinon	%	93			70-130	Pass	
Ethion	%	116			70-130	Pass	
Fenitrothion	%	108			70-130	Pass	
Methyl parathion	%	80			70-130	Pass	
Mevinphos	%	103			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	102			80-120	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Cadmium			%	111			80-120	Pass	
Chromium			%	120			80-120	Pass	
Copper			%	116			80-120	Pass	
Lead			%	117			80-120	Pass	
Mercury			%	114			75-125	Pass	
Nickel			%	119			80-120	Pass	
Zinc			%	118			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	M15-Ja04883	CP	%	97			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	M15-Ja04883	CP	%	97			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M15-Ja06341	NCP	%	80			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M15-Ja04884	CP	%	102			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M15-Ja04884	CP	%	93			70-130	Pass	
Toluene	M15-Ja04884	CP	%	100			70-130	Pass	
Ethylbenzene	M15-Ja04884	CP	%	112			70-130	Pass	
m&p-Xylenes	M15-Ja04884	CP	%	102			70-130	Pass	
o-Xylene	M15-Ja04884	CP	%	103			70-130	Pass	
Xylenes - Total	M15-Ja04884	CP	%	103			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M15-Ja04884	CP	%	120			70-130	Pass	
TRH C6-C10	M15-Ja04884	CP	%	112			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M15-Ja04884	CP	%	80			70-130	Pass	
Acenaphthylene	M15-Ja04884	CP	%	85			70-130	Pass	
Anthracene	M15-Ja04884	CP	%	80			70-130	Pass	
Benz(a)anthracene	M15-Ja04884	CP	%	81			70-130	Pass	
Benzo(a)pyrene	M15-Ja04884	CP	%	76			70-130	Pass	
Benzo(b&j)fluoranthene	M15-Ja04884	CP	%	71			70-130	Pass	
Benzo(g.h.i)perylene	M15-Ja04884	CP	%	73			70-130	Pass	
Benzo(k)fluoranthene	M15-Ja04884	CP	%	74			70-130	Pass	
Chrysene	M15-Ja04884	CP	%	80			70-130	Pass	
Dibenz(a.h)anthracene	M15-Ja04884	CP	%	75			70-130	Pass	
Fluoranthene	M15-Ja04884	CP	%	81			70-130	Pass	
Fluorene	M15-Ja04884	CP	%	82			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M15-Ja04884	CP	%	71			70-130	Pass	
Naphthalene	M15-Ja04884	CP	%	84			70-130	Pass	
Phenanthrene	M15-Ja04884	CP	%	80			70-130	Pass	
Pyrene	M15-Ja04884	CP	%	80			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Cadmium	M15-Ja04887	CP	%	76			75-125	Pass	
Chromium	M15-Ja04887	CP	%	105			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Copper	M15-Ja04887	CP	%	105			75-125	Pass	
Lead	M15-Ja04887	CP	%	75			75-125	Pass	
Mercury	M15-Ja04887	CP	%	104			70-130	Pass	
Nickel	M15-Ja04887	CP	%	85			75-125	Pass	
Zinc	M15-Ja04887	CP	%	79			75-125	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	M15-Ja04889	CP	%	107			70-130	Pass	
4.4'-DDE	M15-Ja04889	CP	%	100			70-130	Pass	
4.4'-DDT	M15-Ja04889	CP	%	114			70-130	Pass	
a-BHC	M15-Ja04889	CP	%	98			70-130	Pass	
Aldrin	M15-Ja04889	CP	%	91			70-130	Pass	
b-BHC	M15-Ja04889	CP	%	112			70-130	Pass	
d-BHC	M15-Ja04889	CP	%	100			70-130	Pass	
Dieldrin	M15-Ja04889	CP	%	90			70-130	Pass	
Endosulfan I	M15-Ja04889	CP	%	90			70-130	Pass	
Endosulfan II	M15-Ja04889	CP	%	91			70-130	Pass	
Endosulfan sulphate	M15-Ja04889	CP	%	88			70-130	Pass	
Endrin	M15-Ja04889	CP	%	94			70-130	Pass	
Endrin aldehyde	M15-Ja04889	CP	%	83			70-130	Pass	
Endrin ketone	M15-Ja04889	CP	%	119			70-130	Pass	
g-BHC (Lindane)	M15-Ja04889	CP	%	97			70-130	Pass	
Heptachlor	M15-Ja04889	CP	%	113			70-130	Pass	
Heptachlor epoxide	M15-Ja04889	CP	%	89			70-130	Pass	
Hexachlorobenzene	M15-Ja04889	CP	%	89			70-130	Pass	
Methoxychlor	M15-Ja04889	CP	%	125			70-130	Pass	
Spike - % Recovery									
Organophosphorous Pesticides				Result 1					
Diazinon	M15-Ja04893	CP	%	87			70-130	Pass	
Ethion	M15-Ja04893	CP	%	93			70-130	Pass	
Fenitrothion	M15-Ja04893	CP	%	84			70-130	Pass	
Methyl parathion	M15-Ja04893	CP	%	117			70-130	Pass	
Mevinphos	M15-Ja04893	CP	%	79			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Mercury	M15-Ja04901	CP	%	106			70-130	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	M15-Ja04883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M15-Ja04883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M15-Ja04883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M15-Ja04883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M15-Ja04883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M15-Ja04883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M15-Ja04883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M15-Ja04883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M15-Ja04883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M15-Ja04883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M15-Ja04883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M15-Ja04883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M15-Ja04883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M15-Ja04883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M15-Ja04883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M15-Ja04883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Organophosphorous Pesticides				Result 1	Result 2	RPD			
Bolstar	M15-Ja04883	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	M15-Ja04883	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	M15-Ja04883	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	M15-Ja04883	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	M15-Ja04883	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	M15-Ja04883	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	M15-Ja04883	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	M15-Ja04883	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	M15-Ja04883	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	M15-Ja04883	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	M15-Ja04883	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	M15-Ja04883	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl azinphos	M15-Ja04883	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	M15-Ja04883	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	M15-Ja04883	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Naled	M15-Ja04883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phorate	M15-Ja04883	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	M15-Ja04883	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	M15-Ja04883	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	M15-Ja04883	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M15-Ja04886	CP	mg/kg	3.4	3.8	11	30%	Pass	
Cadmium	M15-Ja04886	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M15-Ja04886	CP	mg/kg	77	75	3.0	30%	Pass	
Copper	M15-Ja04886	CP	mg/kg	23	22	5.0	30%	Pass	
Lead	M15-Ja04886	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Mercury	M15-Ja04886	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	M15-Ja04886	CP	mg/kg	29	29	<1	30%	Pass	
Zinc	M15-Ja04886	CP	mg/kg	34	37	9.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M15-Ja04887	CP	mg/kg	2.2	3.3	40	30%	Fail	Q15
Cadmium	M15-Ja04887	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M15-Ja04887	CP	mg/kg	87	88	1.0	30%	Pass	
Copper	M15-Ja04887	CP	mg/kg	38	39	2.0	30%	Pass	
Lead	M15-Ja04887	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Mercury	M15-Ja04887	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	M15-Ja04887	CP	mg/kg	46	46	2.0	30%	Pass	
Zinc	M15-Ja04887	CP	mg/kg	31	32	5.0	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M15-Ja04888	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	M15-Ja04888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	M15-Ja04888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	M15-Ja04888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	M15-Ja04888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M15-Ja04888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	M15-Ja04888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	M15-Ja04888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	M15-Ja04888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	M15-Ja04888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	M15-Ja04888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	M15-Ja04888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Endrin	M15-Ja04888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	M15-Ja04888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	M15-Ja04888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	M15-Ja04888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	M15-Ja04888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	M15-Ja04888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	M15-Ja04888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	M15-Ja04888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	M15-Ja04888	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	M15-Ja04889	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M15-Ja04889	CP	mg/kg	68	60	13	30%	Pass	
TRH C29-C36	M15-Ja04889	CP	mg/kg	170	140	17	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	M15-Ja04889	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M15-Ja04889	CP	mg/kg	180	150	16	30%	Pass	
TRH >C34-C40	M15-Ja04889	CP	mg/kg	130	110	19	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M15-Ja04891	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M15-Ja04891	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	M15-Ja04891	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	M15-Ja04891	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	M15-Ja04891	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	M15-Ja04891	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	M15-Ja04891	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M15-Ja04891	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M15-Ja04891	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	M15-Ja04891	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M15-Ja04892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M15-Ja04892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M15-Ja04892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M15-Ja04892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M15-Ja04892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M15-Ja04892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M15-Ja04892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M15-Ja04892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M15-Ja04892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M15-Ja04892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M15-Ja04892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M15-Ja04892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M15-Ja04892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M15-Ja04892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M15-Ja04892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M15-Ja04892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Organophosphorous Pesticides				Result 1	Result 2	RPD			
Bolstar	M15-Ja04892	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	M15-Ja04892	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	M15-Ja04892	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	M15-Ja04892	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	M15-Ja04892	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	M15-Ja04892	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	M15-Ja04892	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	M15-Ja04892	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	M15-Ja04892	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	M15-Ja04892	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	M15-Ja04892	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	M15-Ja04892	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl azinphos	M15-Ja04892	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	M15-Ja04892	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	M15-Ja04892	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Naled	M15-Ja04892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phorate	M15-Ja04892	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	M15-Ja04892	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	M15-Ja04892	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	M15-Ja04892	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M15-Ja04899	CP	mg/kg	2.9	3.2	10	30%	Pass	
Cadmium	M15-Ja04899	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M15-Ja04899	CP	mg/kg	78	84	7.0	30%	Pass	
Copper	M15-Ja04899	CP	mg/kg	34	34	1.0	30%	Pass	
Lead	M15-Ja04899	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Mercury	M15-Ja04899	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	M15-Ja04899	CP	mg/kg	120	98	17	30%	Pass	
Zinc	M15-Ja04899	CP	mg/kg	24	26	6.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M15-Ja04901	CP	mg/kg	3.2	2.9	10	30%	Pass	
Cadmium	M15-Ja04901	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M15-Ja04901	CP	mg/kg	79	80	1.0	30%	Pass	
Copper	M15-Ja04901	CP	mg/kg	32	32	1.0	30%	Pass	
Lead	M15-Ja04901	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Mercury	M15-Ja04901	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	M15-Ja04901	CP	mg/kg	51	50	1.0	30%	Pass	
Zinc	M15-Ja04901	CP	mg/kg	39	38	3.0	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
G01	The LORs have been raised due to matrix interference
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins | mgt's Acceptance Criteria as stipulated in SOP 05. Refer to Glossary Page of this report for further details

Authorised By

Mary Makarios	Analytical Services Manager
Carroll Lee	Senior Analyst-Organic (VIC)
Carroll Lee	Senior Analyst-Volatile (VIC)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)

Glenn Jackson

National Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

eurofins | mgt

Certificate of Analysis

Coffey Environments Pty Ltd Newcastle
Lot 101, 19 Warabrook Boulevard
Warabrook
NSW 2304

NATA WORLD RECOGNISED ACCREDITATION

NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Attention: **Libby Betz**

Report **444435-W**
Project name WINDERS LANE
Project ID ENAUWARA04581AA
Received Date Jan 15, 2015

Client Sample ID **Sample Matrix** **Eurofins | mgt Sample No.** **Date Sampled** Test/Reference	LOR	Unit	**POND 1 SW1** **Water** **M15-Ja04894** **Jan 14, 2015**	**POND 2 SW2** **Water** **M15-Ja04895** **Jan 14, 2015**	**POND 3 SW3** **Water** **M15-Ja04896** **Jan 14, 2015**	**QC1** **Water** **M15-Ja04900** **Jan 14, 2015**
Organochlorine Pesticides						
Chlordanes - Total	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
4.4'-DDD	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
4.4'-DDE	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
4.4'-DDT	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
a-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Aldrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
b-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
d-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Dieldrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endosulfan I	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endosulfan II	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endosulfan sulphate	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endrin aldehyde	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endrin ketone	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Heptachlor	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Heptachlor epoxide	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Hexachlorobenzene	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Methoxychlor	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Toxaphene	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Dibutylchlorendate (surr.)	1	%	105	84	76	88
Tetrachloro-m-xylene (surr.)	1	%	116	141	88	116
Organophosphorous Pesticides						
Bolstar	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorpyrifos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Demeton-O	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Diazinon	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Disulfoton	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethoprop	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002

Client Sample ID			POND 1 SW1	POND 2 SW2	POND 3 SW3	QC1
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**M15-Ja04894**	**M15-Ja04895**	**M15-Ja04896**	**M15-Ja04900**
Date Sampled			**Jan 14, 2015**	**Jan 14, 2015**	**Jan 14, 2015**	**Jan 14, 2015**
Test/Reference	LOR	Unit				
Organophosphorous Pesticides						
Merphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methyl azinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Mevinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Naled	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Phorate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ronnel	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tokuthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Trichloronate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Triphenylphosphate (surr.)	1	%	71	63	97	125
Conductivity (at 25°C)	1	uS/cm	320	290	240	-
pH	0.1	pH Units	8.4	6.5	8.0	-
Heavy Metals						
Arsenic	0.001	mg/L	0.001	< 0.001	0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	0.005	0.033	0.11	0.005
Copper	0.001	mg/L	0.005	0.023	0.019	0.006
Lead	0.001	mg/L	< 0.001	0.003	0.002	< 0.001
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	0.008	0.049	0.026	0.008
Zinc	0.001	mg/L	0.003	0.021	0.011	0.003

Client Sample ID			QC4	QC5
Sample Matrix			**Water**	**Water**
Eurofins | mgt Sample No.			**M15-Ja04902**	**M15-Ja04903**
Date Sampled			**Jan 14, 2015**	**Jan 14, 2015**
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	0.02	mg/L	< 0.02	< 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	-
Volatile Organics				
Naphthalene[N02]	0.02	mg/L	-	< 0.02
BTEX				
Benzene	0.001	mg/L	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	67	73

Client Sample ID			QC4	QC5
Sample Matrix			Water	Water
Eurofins | mgt Sample No.			M15-Ja04902	M15-Ja04903
Date Sampled			Jan 14, 2015	Jan 14, 2015
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.02	mg/L	< 0.02	-
TRH C6-C10	0.02	mg/L	< 0.02	-
TRH C6-C10	0.02	mg/L	-	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	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	-
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	%	53	-
p-Terphenyl-d14 (surr.)	1	%	66	-
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	-

Client Sample ID			QC4	QC5
Sample Matrix			Water	Water
Eurofins | mgt Sample No.			M15-Ja04902	M15-Ja04903
Date Sampled			Jan 14, 2015	Jan 14, 2015
Test/Reference	LOR	Unit		
Organochlorine Pesticides				
Methoxychlor	0.0001	mg/L	< 0.0001	-
Toxaphene	0.01	mg/L	< 0.01	-
Dibutylchlorendate (surr.)	1	%	79	-
Tetrachloro-m-xylene (surr.)	1	%	107	-
Organophosphorous Pesticides				
Bolstar	0.002	mg/L	< 0.002	-
Chlorpyrifos	0.002	mg/L	< 0.002	-
Demeton-O	0.002	mg/L	< 0.002	-
Diazinon	0.002	mg/L	< 0.002	-
Dichlorvos	0.002	mg/L	< 0.002	-
Disulfoton	0.002	mg/L	< 0.002	-
Ethion	0.002	mg/L	< 0.002	-
Ethoprop	0.002	mg/L	< 0.002	-
Fenitrothion	0.002	mg/L	< 0.002	-
Fensulfothion	0.002	mg/L	< 0.002	-
Fenthion	0.002	mg/L	< 0.002	-
Merphos	0.002	mg/L	< 0.002	-
Methyl azinphos	0.002	mg/L	< 0.002	-
Methyl parathion	0.002	mg/L	< 0.002	-
Mevinphos	0.002	mg/L	< 0.002	-
Naled	0.002	mg/L	< 0.002	-
Phorate	0.002	mg/L	< 0.002	-
Ronnel	0.002	mg/L	< 0.002	-
Tokuthion	0.002	mg/L	< 0.002	-
Trichloronate	0.002	mg/L	< 0.002	-
Triphenylphosphate (surr.)	1	%	54	-
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	0.001	mg/L	< 0.001	-

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	Jan 22, 2015	7 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
Volatile Organics	Melbourne	Jan 15, 2015	7 Day
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS			
BTEX	Melbourne	Jan 15, 2015	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jan 22, 2015	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Eurofins | mgt Suite 10			
Polycyclic Aromatic Hydrocarbons	Melbourne	Jan 22, 2015	7 Day
- Method: USEPA 8270 Polycyclic Aromatic Hydrocarbons			
Organochlorine Pesticides	Melbourne	Jan 22, 2015	7 Day
- Method: USEPA 8081 Organochlorine Pesticides			
Organophosphorous Pesticides	Melbourne	Jan 22, 2015	7 Day
- Method: USEPA 8270 Organophosphorus Pesticides			
Metals M8	Melbourne	Jan 16, 2015	28 Day
- Method: USEPA 6010/6020 Heavy Metals & USEPA 7470/71 Mercury			
Conductivity (at 25°C)	Melbourne	Jan 15, 2015	28 Day
- Method: APHA 2510 Conductivity by Direct Measurement			
pH	Melbourne	Jan 15, 2015	0 Hours
- Method: APHA 4500 pH by Direct Measurement - ** Samples analysed outside holding time. Analysis should be performed in situ. Results for reference only.			

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NATA # 1261 Site # 20794

Company Name: Coffey Environments P/L N'castle
Address: Lot 101, 19 Warabrook Boulevard
Warabrook
NSW 2304

Project Name: WINDERS LANE
Project ID: ENAUWARA04581AA

Order No.:
Report #: 444435
Phone: 02 4016 2300
Fax: 02 4016 2380

Received: Jan 15, 2015 1:25 PM
Due: Jan 22, 2015
Priority: 5 Day
Contact Name: Libby Betz

Eurofins | mgt Client Manager: Mary Makarios

Sample Detail					% Moisture	Conductivity (at 25°C)	pH	Organochlorine Pesticides	Organophosphorous Pesticides	Metals M8	Eurofins | mgt Suite 10	BTEX and Volatile TRH
Laboratory where analysis is conducted												
Melbourne Laboratory - NATA Site # 1254 & 14271					X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794												
External Laboratory												
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
SS1	Jan 14, 2015		Soil	M15-Ja04883	X						X	
SS2	Jan 14, 2015		Soil	M15-Ja04884	X						X	
SS3	Jan 14, 2015		Soil	M15-Ja04885	X			X	X	X		
SS4	Jan 14, 2015		Soil	M15-Ja04886	X			X	X	X		
SS5	Jan 14, 2015		Soil	M15-Ja04887	X						X	
SS6	Jan 14, 2015		Soil	M15-Ja04888	X						X	
SS7	Jan 14, 2015		Soil	M15-Ja04889	X						X	
SS8	Jan 14, 2015		Soil	M15-Ja04890	X			X	X	X		
SS9	Jan 14, 2015		Soil	M15-Ja04891	X						X	

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Laboratory where analysis is conducted												
Melbourne Laboratory - NATA Site # 1254 & 14271					X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794												
External Laboratory												
SS10	Jan 14, 2015		Soil	M15-Ja04892	X						X	
SS11	Jan 14, 2015		Soil	M15-Ja04893	X						X	
POND 1 SW1	Jan 14, 2015		Water	M15-Ja04894		X	X	X	X	X		
POND 2 SW2	Jan 14, 2015		Water	M15-Ja04895		X	X	X	X	X		
POND 3 SW3	Jan 14, 2015		Water	M15-Ja04896		X	X	X	X	X		
POND 1 SED1	Jan 14, 2015		Soil	M15-Ja04897	X			X	X	X		
POND 2 SED2	Jan 14, 2015		Soil	M15-Ja04898	X			X	X	X		
POND 3 SED3	Jan 14, 2015		Soil	M15-Ja04899	X			X	X	X		
QC1	Jan 14, 2015		Water	M15-Ja04900		X	X	X	X	X		
QC2	Jan 14, 2015		Soil	M15-Ja04901	X						X	

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Sample Detail					% Moisture	Conductivity (at 25°C)	pH	Organochlorine Pesticides	Organophosphorous Pesticides	Metals M8	Eurofins | mgt Suite 10	BTEX and Volatile TRH
Laboratory where analysis is conducted												
Melbourne Laboratory - NATA Site # 1254 & 14271					X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794												
External Laboratory												
QC4	Jan 14, 2015		Water	M15-Ja04902							X	
QC5	Jan 14, 2015		Water	M15-Ja04903								X

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. 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.

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

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

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. 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.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
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 20-130%.

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, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene 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 Arochlor 1260 in Matrix Spikes and LCS's.
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 RPD's 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							
Volatile Organics							
Naphthalene	mg/L	< 0.02			0.02	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							
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10 less BTEX (F1)	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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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							
Organophosphorous Pesticides							
Bolstar	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos	mg/L	< 0.002			0.002	Pass	
Demeton-O	mg/L	< 0.002			0.002	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
Ethion	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Merphos	mg/L	< 0.002			0.002	Pass	
Methyl azinphos	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Naled	mg/L	< 0.002			0.002	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Tokuthion	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	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	< 0.001			0.001	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	85			70-130	Pass	
TRH C10-C14	%	115			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
Naphthalene	%	77			75-125	Pass	
LCS - % Recovery							
BTEX							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzene	%	92			70-130	Pass	
Toluene	%	93			70-130	Pass	
Ethylbenzene	%	90			70-130	Pass	
m&p-Xylenes	%	88			70-130	Pass	
Xylenes - Total	%	90			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH C6-C10	%	79			70-130	Pass	
TRH >C10-C16	%	116			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	82			70-130	Pass	
Acenaphthylene	%	82			70-130	Pass	
Anthracene	%	100			70-130	Pass	
Benz(a)anthracene	%	96			70-130	Pass	
Benzo(a)pyrene	%	109			70-130	Pass	
Benzo(b&j)fluoranthene	%	115			70-130	Pass	
Benzo(g.h.i)perylene	%	105			70-130	Pass	
Benzo(k)fluoranthene	%	120			70-130	Pass	
Chrysene	%	94			70-130	Pass	
Dibenz(a.h)anthracene	%	118			70-130	Pass	
Fluoranthene	%	90			70-130	Pass	
Fluorene	%	87			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	111			70-130	Pass	
Naphthalene	%	72			70-130	Pass	
Phenanthrene	%	92			70-130	Pass	
Pyrene	%	89			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4.4'-DDD	%	79			70-130	Pass	
4.4'-DDE	%	96			70-130	Pass	
4.4'-DDT	%	88			70-130	Pass	
a-BHC	%	96			70-130	Pass	
Aldrin	%	90			70-130	Pass	
b-BHC	%	110			70-130	Pass	
d-BHC	%	97			70-130	Pass	
Dieldrin	%	117			70-130	Pass	
Endosulfan I	%	97			70-130	Pass	
Endosulfan II	%	89			70-130	Pass	
Endosulfan sulphate	%	77			70-130	Pass	
Endrin	%	92			70-130	Pass	
Endrin ketone	%	84			70-130	Pass	
g-BHC (Lindane)	%	107			70-130	Pass	
Heptachlor	%	81			70-130	Pass	
Heptachlor epoxide	%	86			70-130	Pass	
Hexachlorobenzene	%	106			70-130	Pass	
Methoxychlor	%	99			70-130	Pass	
LCS - % Recovery							
Organophosphorous Pesticides							
Diazinon	%	78			70-130	Pass	
Ethion	%	88			70-130	Pass	
Fenitrothion	%	71			70-130	Pass	
Methyl parathion	%	108			70-130	Pass	
Mevinphos	%	116			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery									
Heavy Metals									
Arsenic			%	96			80-120	Pass	
Cadmium			%	96			80-120	Pass	
Chromium			%	98			80-120	Pass	
Copper			%	98			80-120	Pass	
Lead			%	97			80-120	Pass	
Mercury			%	93			75-125	Pass	
Nickel			%	97			80-120	Pass	
Zinc			%	105			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Organophosphorous Pesticides				Result 1					
Diazinon	M15-Ja04895	CP	%	78			70-130	Pass	
Ethion	M15-Ja04895	CP	%	92			70-130	Pass	
Fenitrothion	M15-Ja04895	CP	%	78			70-130	Pass	
Methyl parathion	M15-Ja04895	CP	%	123			70-130	Pass	
Mevinphos	M15-Ja04895	CP	%	77			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	M15-Ja04896	CP	%	85			70-130	Pass	
4.4'-DDE	M15-Ja04896	CP	%	90			70-130	Pass	
a-BHC	M15-Ja04896	CP	%	79			70-130	Pass	
Aldrin	M15-Ja04896	CP	%	78			70-130	Pass	
b-BHC	M15-Ja04896	CP	%	94			70-130	Pass	
d-BHC	M15-Ja04896	CP	%	85			70-130	Pass	
Dieldrin	M15-Ja04896	CP	%	76			70-130	Pass	
Endosulfan I	M15-Ja04896	CP	%	77			70-130	Pass	
Endosulfan II	M15-Ja04896	CP	%	81			70-130	Pass	
Endosulfan sulphate	M15-Ja04896	CP	%	79			70-130	Pass	
Endrin	M15-Ja04896	CP	%	89			70-130	Pass	
Endrin ketone	M15-Ja04896	CP	%	79			70-130	Pass	
g-BHC (Lindane)	M15-Ja04896	CP	%	87			70-130	Pass	
Heptachlor epoxide	M15-Ja04896	CP	%	79			70-130	Pass	
Hexachlorobenzene	M15-Ja04896	CP	%	92			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M15-Ja04900	CP	%	95			75-125	Pass	
Cadmium	M15-Ja04900	CP	%	94			75-125	Pass	
Chromium	M15-Ja04900	CP	%	95			75-125	Pass	
Copper	M15-Ja04900	CP	%	94			75-125	Pass	
Lead	M15-Ja04900	CP	%	92			75-125	Pass	
Mercury	M15-Ja04900	CP	%	94			70-130	Pass	
Nickel	M15-Ja04900	CP	%	94			75-125	Pass	
Zinc	M15-Ja04900	CP	%	96			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M15-Ja06073	NCP	%	114			70-130	Pass	
TRH C10-C14	M15-Ja04806	NCP	%	89			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
Naphthalene	M15-Ja06073	NCP	%	92			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzene	M15-Ja06073	NCP	%	91			70-130	Pass	
Toluene	M15-Ja06073	NCP	%	94			70-130	Pass	
Ethylbenzene	M15-Ja06073	NCP	%	96			70-130	Pass	
m&p-Xylenes	M15-Ja06073	NCP	%	78			70-130	Pass	
o-Xylene	M15-Ja06073	NCP	%	98			70-130	Pass	
Xylenes - Total	M15-Ja06073	NCP	%	85			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH C6-C10	M15-Ja06073	NCP	%	120			70-130	Pass	
TRH >C10-C16	M15-Ja04806	NCP	%	89			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M15-Ja07218	NCP	%	87			70-130	Pass	
Acenaphthylene	M15-Ja07218	NCP	%	92			70-130	Pass	
Anthracene	M15-Ja07218	NCP	%	98			70-130	Pass	
Benz(a)anthracene	M15-Ja07218	NCP	%	101			70-130	Pass	
Benzo(a)pyrene	M15-Ja07218	NCP	%	112			70-130	Pass	
Benzo(b&j)fluoranthene	M15-Ja07218	NCP	%	104			70-130	Pass	
Benzo(g.h.i)perylene	M15-Ja07218	NCP	%	101			70-130	Pass	
Benzo(k)fluoranthene	M15-Ja07218	NCP	%	119			70-130	Pass	
Chrysene	M15-Ja07218	NCP	%	99			70-130	Pass	
Dibenz(a.h)anthracene	M15-Ja07218	NCP	%	110			70-130	Pass	
Fluoranthene	M15-Ja07218	NCP	%	97			70-130	Pass	
Fluorene	M15-Ja07218	NCP	%	91			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M15-Ja07218	NCP	%	106			70-130	Pass	
Naphthalene	M15-Ja07218	NCP	%	81			70-130	Pass	
Phenanthrene	M15-Ja07218	NCP	%	91			70-130	Pass	
Pyrene	M15-Ja07218	NCP	%	95			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M15-Ja04894	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4.4'-DDD	M15-Ja04894	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
4.4'-DDE	M15-Ja04894	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
4.4'-DDT	M15-Ja04894	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
a-BHC	M15-Ja04894	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Aldrin	M15-Ja04894	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
b-BHC	M15-Ja04894	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
d-BHC	M15-Ja04894	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Dieldrin	M15-Ja04894	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan I	M15-Ja04894	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan II	M15-Ja04894	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan sulphate	M15-Ja04894	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin	M15-Ja04894	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin aldehyde	M15-Ja04894	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin ketone	M15-Ja04894	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
g-BHC (Lindane)	M15-Ja04894	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Heptachlor	M15-Ja04894	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Heptachlor epoxide	M15-Ja04894	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Hexachlorobenzene	M15-Ja04894	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Methoxychlor	M15-Ja04894	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	

Duplicate									
Organophosphorous Pesticides				Result 1	Result 2	RPD			
Bolstar	M15-Ja04894	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorpyrifos	M15-Ja04894	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Demeton-O	M15-Ja04894	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Diazinon	M15-Ja04894	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dichlorvos	M15-Ja04894	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Disulfoton	M15-Ja04894	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethion	M15-Ja04894	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethoprop	M15-Ja04894	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenitrothion	M15-Ja04894	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fensulfothion	M15-Ja04894	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenthion	M15-Ja04894	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Merphos	M15-Ja04894	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methyl azinphos	M15-Ja04894	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methyl parathion	M15-Ja04894	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Mevinphos	M15-Ja04894	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Naled	M15-Ja04894	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Phorate	M15-Ja04894	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ronnel	M15-Ja04894	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tokuthion	M15-Ja04894	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Trichloronate	M15-Ja04894	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (at 25°C)	M15-Ja05645	NCP	uS/cm	6200	6100	1.0	30%	Pass	
pH	M15-Ja05645	NCP	pH Units	7.9	7.9	pass	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M15-Ja04900	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	M15-Ja04900	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	M15-Ja04900	CP	mg/L	0.005	0.005	1.0	30%	Pass	
Copper	M15-Ja04900	CP	mg/L	0.006	0.006	<1	30%	Pass	
Lead	M15-Ja04900	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	M15-Ja04900	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	M15-Ja04900	CP	mg/L	0.008	0.008	3.0	30%	Pass	
Zinc	M15-Ja04900	CP	mg/L	0.003	0.004	40	30%	Fail	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	M15-Ja06070	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M15-Ja06070	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M15-Ja06070	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	M15-Ja06070	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	M15-Ja06070	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	M15-Ja06070	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M15-Ja07217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	M15-Ja07217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	M15-Ja07217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	M15-Ja07217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	M15-Ja07217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	M15-Ja07217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	M15-Ja07217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	M15-Ja07217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Chrysene	M15-Ja07217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	M15-Ja07217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	M15-Ja07217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	M15-Ja07217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M15-Ja07217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	M15-Ja07217	NCP	mg/L	0.0014	0.0018	29	30%	Pass	
Phenanthrene	M15-Ja07217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	M15-Ja07217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M15-Ja04903	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Naphthalene	M15-Ja04903	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M15-Ja04903	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	M15-Ja04903	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	M15-Ja04903	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	M15-Ja04903	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	M15-Ja04903	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	M15-Ja04903	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C10	M15-Ja04903	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	M15-Ja04903	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	

Comments

Sample Integrity

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

Mary Makarios	Analytical Services Manager
Carroll Lee	Senior Analyst-Organic (VIC)
Carroll Lee	Senior Analyst-Volatile (VIC)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)

Glenn Jackson

National Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Coffey Environments Pty Ltd Newcastle
Lot 101, 19 Warabrook Boulevard
Warabrook
NSW 2304

Attention: **Damien Hendrickx**

Report **445698-S**
Project name WINDERS LANE
Project ID ENAUARA04581AA
Received Date Jan 29, 2015

Client Sample ID			**SS1**
Sample Matrix			**Soil**
Eurofins | mgt Sample No.			**M15-Ja14487**
Date Sampled			**Jan 14, 2015**
Test/Reference	LOR	Unit	
% Clay*	1	%	47
Conductivity (1:5 aqueous extract at 25°C)	10	uS/cm	100
pH (1:5 Aqueous extract)	0.1	pH Units	7.8
% Moisture	0.1	%	35
Ion Exchange Properties			
Cation Exchange Capacity	0.05	meq/100g	[R14]340

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
% Clay*	Brisbane	Jan 30, 2015	6 Month
- Method: LTM-GEN-7040			
pH (1:5 Aqueous extract)	Melbourne	Jan 29, 2015	7 Day
- Method: LM-LTM-INO-4000			
Conductivity (1:5 aqueous extract at 25°C)	Melbourne	Jan 29, 2015	7 Day
- Method: LM-LTM-INO-4010			
Ion Exchange Properties	Melbourne	Jan 30, 2015	
% Moisture	Melbourne	Jan 29, 2015	14 Day
- Method: LTM-GEN-7080 Moisture			

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NATA # 1261 Site # 20794

Company Name: Coffey Environments P/L N'castle
Address: Lot 101, 19 Warabrook Boulevard
Warabrook
NSW 2304

Project Name: WINDERS LANE
Project ID: ENAUARA04581AA

Order No.:
Report #: 445698
Phone: 02 4016 2300
Fax: 02 4016 2380

Received: Jan 29, 2015 11:33 AM
Due: Feb 3, 2015
Priority: 3 Day
Contact Name:

Eurofins | mgt Client Manager: Mary Makarios

Sample Detail					% Clay*	pH (1:5 Aqueous extract)	Moisture Set	Cation Exchange Capacity
Laboratory where analysis is conducted								
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794					X			
External Laboratory								
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
SS1	Jan 14, 2015		Soil	M15-Ja14487	X	X	X	X

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. 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.

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

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

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. 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.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
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 20-130%.

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, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene 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 Arochlor 1260 in Matrix Spikes and LCS's.
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 RPD's 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									
% Clay*			%	pass			1	N/A	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
% Clay*	M15-Ja09434	NCP	%	10	10	<1	30%	Pass	
Conductivity (1:5 aqueous extract at 25°C)	M15-Ja14487	CP	uS/cm	100	98	5.0	30%	Pass	
pH (1:5 Aqueous extract)	M15-Ja14487	CP	pH Units	7.8	7.7	pass	30%	Pass	
% Moisture	M15-Ja14516	NCP	%	18	18	<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	No
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
R14	These results have been confirmed by repeat analysis

Authorised By

Mary Makarios	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)
Richard Corner	Senior Analyst-Inorganic (QLD)

Glenn Jackson
National Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

eurofins | mgt

Certificate of Analysis

Coffey Environments Pty Ltd Newcastle
Lot 101, 19 Warabrook Boulevard
Warabrook
NSW 2304

NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Attention: **Damien Hendrickx**

Report **445956-S**
Project name WINDERS LANE
Project ID ENAUWARA04581AA
Received Date Feb 02, 2015

Client Sample ID			**SS1**	**SS2**	**SS3**	**SS4**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M15-Fe00144**	**M15-Fe00145**	**M15-Fe00146**	**M15-Fe00147**
Date Sampled			**Jan 14, 2015**	**Jan 14, 2015**	**Jan 14, 2015**	**Jan 14, 2015**
Test/Reference	LOR	Unit				
Acid Herbicides						
2.4-D	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-DB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-T	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-TP	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Actril (loxynil)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dicamba	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dinitro-o-cresol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dinoseb	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
MCPA	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
MCPB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Mecoprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Warfarin (surr.)	1	%	92	95	92	89
% Moisture	0.1	%	38	31	34	33

Client Sample ID			**SS5**	**SS6**	**SS7**	**SS8**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M15-Fe00148**	**M15-Fe00149**	**M15-Fe00150**	**M15-Fe00151**
Date Sampled			**Jan 14, 2015**	**Jan 14, 2015**	**Jan 14, 2015**	**Jan 14, 2015**
Test/Reference	LOR	Unit				
Acid Herbicides						
2.4-D	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-DB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-T	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-TP	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Actril (loxynil)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dicamba	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dinitro-o-cresol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dinoseb	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
MCPA	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
MCPB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Mecoprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Warfarin (surr.)	1	%	97	94	95	89

Client Sample ID			SS5	SS6	SS7	SS8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M15-Fe00148	M15-Fe00149	M15-Fe00150	M15-Fe00151
Date Sampled			Jan 14, 2015	Jan 14, 2015	Jan 14, 2015	Jan 14, 2015
Test/Reference	LOR	Unit				
% Moisture	0.1	%	24	30	31	35

Client Sample ID			SS9	SS10	SS11	POND 1 SED 1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M15-Fe00152	M15-Fe00153	M15-Fe00154	M15-Fe00155
Date Sampled			Jan 14, 2015	Jan 14, 2015	Jan 14, 2015	Jan 14, 2015
Test/Reference	LOR	Unit				
Acid Herbicides						
2.4-D	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-DB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-T	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-TP	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Actril (loxynil)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dicamba	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dinitro-o-cresol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dinoseb	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
MCPA	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
MCPB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Mecoprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Warfarin (surr.)	1	%	95	95	118	96
% Moisture	0.1	%	36	31	28	28

Client Sample ID			POND 2 SED 2	POND 3 SED 3
Sample Matrix			Soil	Soil
Eurofins | mgt Sample No.			M15-Fe00156	M15-Fe00157
Date Sampled			Jan 14, 2015	Jan 14, 2015
Test/Reference	LOR	Unit		
Acid Herbicides				
2.4-D	0.5	mg/kg	< 0.5	< 0.5
2.4-DB	0.5	mg/kg	< 0.5	< 0.5
2.4.5-T	0.5	mg/kg	< 0.5	< 0.5
2.4.5-TP	0.5	mg/kg	< 0.5	< 0.5
Actril (loxynil)	0.5	mg/kg	< 0.5	< 0.5
Dicamba	0.5	mg/kg	< 0.5	< 0.5
Dichlorprop	0.5	mg/kg	< 0.5	< 0.5
Dinitro-o-cresol	0.5	mg/kg	< 0.5	< 0.5
Dinoseb	0.5	mg/kg	< 0.5	< 0.5
MCPA	0.5	mg/kg	< 0.5	< 0.5
MCPB	0.5	mg/kg	< 0.5	< 0.5
Mecoprop	0.5	mg/kg	< 0.5	< 0.5
Warfarin (surr.)	1	%	90	98
% Moisture	0.1	%	45	42

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
Acid Herbicides	Melbourne	Feb 02, 2015	14 Day
- Method: MGT 530			
% Moisture	Melbourne	Feb 02, 2015	14 Day
- Method: LTM-GEN-7080 Moisture			

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NATA # 1261 Site # 18217

Brisbane
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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: Coffey Environments P/L N'castle
Address: Lot 101, 19 Warabrook Boulevard
Warabrook
NSW 2304

Project Name: WINDERS LANE
Project ID: ENAUWARA04581AA

Order No.:
Report #: 445956
Phone: 02 4016 2300
Fax: 02 4016 2380

Received: Feb 2, 2015 10:06 AM
Due: Feb 3, 2015
Priority: 1 Day
Contact Name: Damien Hendrickx

Eurofins | mgt Client Manager: Mary Makarios

Sample Detail					Acid Herbicides	Moisture Set
Laboratory where analysis is conducted						
Melbourne Laboratory - NATA Site # 1254 & 14271					X	X
Sydney Laboratory - NATA Site # 18217						
Brisbane Laboratory - NATA Site # 20794						
External Laboratory						
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
SS1	Jan 14, 2015		Soil	M15-Fe00144	X	X
SS2	Jan 14, 2015		Soil	M15-Fe00145	X	X
SS3	Jan 14, 2015		Soil	M15-Fe00146	X	X
SS4	Jan 14, 2015		Soil	M15-Fe00147	X	X
SS5	Jan 14, 2015		Soil	M15-Fe00148	X	X
SS6	Jan 14, 2015		Soil	M15-Fe00149	X	X
SS7	Jan 14, 2015		Soil	M15-Fe00150	X	X
SS8	Jan 14, 2015		Soil	M15-Fe00151	X	X
SS9	Jan 14, 2015		Soil	M15-Fe00152	X	X

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Company Name: Coffey Environments P/L N'castle
Address: Lot 101, 19 Warabrook Boulevard
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Project Name: WINDERS LANE
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Received: Feb 2, 2015 10:06 AM
Due: Feb 3, 2015
Priority: 1 Day
Contact Name: Damien Hendrickx

Eurofins | mgt Client Manager: Mary Makarios

Sample Detail					Acid Herbicides	Moisture Set
Laboratory where analysis is conducted						
Melbourne Laboratory - NATA Site # 1254 & 14271					X	X
Sydney Laboratory - NATA Site # 18217						
Brisbane Laboratory - NATA Site # 20794						
External Laboratory						
SS10	Jan 14, 2015		Soil	M15-Fe00153	X	X
SS11	Jan 14, 2015		Soil	M15-Fe00154	X	X
POND 1 SED 1	Jan 14, 2015		Soil	M15-Fe00155	X	X
POND 2 SED 2	Jan 14, 2015		Soil	M15-Fe00156	X	X
POND 3 SED 3	Jan 14, 2015		Soil	M15-Fe00157	X	X
POND 1 SW1	Jan 14, 2015		Water	M15-Fe00158	X	
POND 2 SW2	Jan 14, 2015		Water	M15-Fe00159	X	
POND 3 SW3	Jan 14, 2015		Water	M15-Fe00160	X	

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. 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.

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

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

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. 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.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
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 20-130%.

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, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene 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 Arochlor 1260 in Matrix Spikes and LCS's.
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 RPD's 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							
Acid Herbicides							
2.4-D	mg/kg	< 0.5			0.5	Pass	
2.4-DB	mg/kg	< 0.5			0.5	Pass	
2.4.5-T	mg/kg	< 0.5			0.5	Pass	
2.4.5-TP	mg/kg	< 0.5			0.5	Pass	
Actril (loxynil)	mg/kg	< 0.5			0.5	Pass	
Dicamba	mg/kg	< 0.5			0.5	Pass	
Dichlorprop	mg/kg	< 0.5			0.5	Pass	
Dinitro-o-cresol	mg/kg	< 0.5			0.5	Pass	
Dinoseb	mg/kg	< 0.5			0.5	Pass	
MCPA	mg/kg	< 0.5			0.5	Pass	
MCPB	mg/kg	< 0.5			0.5	Pass	
Mecoprop	mg/kg	< 0.5			0.5	Pass	
LCS - % Recovery							
Acid Herbicides							
2.4-D	%	86			70-130	Pass	
2.4-DB	%	77			70-130	Pass	
2.4.5-T	%	82			70-130	Pass	
2.4.5-TP	%	77			70-130	Pass	
Actril (loxynil)	%	77			70-130	Pass	
Dicamba	%	91			70-130	Pass	
Dichlorprop	%	92			70-130	Pass	
Dinitro-o-cresol	%	80			70-130	Pass	
Dinoseb	%	82			70-130	Pass	
MCPA	%	84			70-130	Pass	
MCPB	%	79			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Acid Herbicides				Result 1					
Dichlorprop	M15-Fe00145	CP	%	76			70-130	Pass	
MCPA	M15-Fe00145	CP	%	70			70-130	Pass	
Spike - % Recovery									
Acid Herbicides				Result 1					
2.4-D	M15-Fe00155	CP	%	78			70-130	Pass	
Actril (loxynil)	M15-Fe00155	CP	%	70			70-130	Pass	
Dichlorprop	M15-Fe00155	CP	%	79			70-130	Pass	
MCPA	M15-Fe00155	CP	%	78			70-130	Pass	
MCPB	M15-Fe00155	CP	%	70			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Acid Herbicides				Result 1	Result 2	RPD			
2.4-D	M15-Fe00144	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-DB	M15-Fe00144	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-T	M15-Fe00144	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-TP	M15-Fe00144	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Actril (loxynil)	M15-Fe00144	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dicamba	M15-Fe00144	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorprop	M15-Fe00144	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinitro-o-cresol	M15-Fe00144	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinoseb	M15-Fe00144	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Acid Herbicides				Result 1	Result 2	RPD			
MCPA	M15-Fe00144	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPB	M15-Fe00144	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mecoprop	M15-Fe00144	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M15-Fe00150	CP	%	31	31	<1	30%	Pass	
Duplicate									
Acid Herbicides				Result 1	Result 2	RPD			
2.4-D	M15-Fe00154	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-DB	M15-Fe00154	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-T	M15-Fe00154	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-TP	M15-Fe00154	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Actril (loxynil)	M15-Fe00154	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dicamba	M15-Fe00154	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorprop	M15-Fe00154	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinitro-o-cresol	M15-Fe00154	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinoseb	M15-Fe00154	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPA	M15-Fe00154	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPB	M15-Fe00154	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mecoprop	M15-Fe00154	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Comments

Sample Integrity

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

Mary Makarios	Analytical Services Manager
Carroll Lee	Senior Analyst-Organic (VIC)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)

Glenn Jackson
National Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

eurofins | mgt

Certificate of Analysis

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Lot 101, 19 Warabrook Boulevard
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NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Attention: **Damien Hendrickx**

Report **445956-W**
Project name WINDERS LANE
Project ID ENAUWARA04581AA
Received Date Feb 02, 2015

Client Sample ID **Sample Matrix** **Eurofins | mgt Sample No.** **Date Sampled** Test/Reference	LOR	Unit	**POND 1 SW1** **Water** **M15-Fe00158** **Jan 14, 2015**	**POND 2 SW2** **Water** **M15-Fe00159** **Jan 14, 2015**	**POND 3 SW3** **Water** **M15-Fe00160** **Jan 14, 2015**
Acid Herbicides					
2.4-D	0.001	mg/L	< 0.001	< 0.001	< 0.001
2.4-DB	0.001	mg/L	< 0.001	< 0.001	< 0.001
2.4.5-T	0.001	mg/L	< 0.001	< 0.001	< 0.001
2.4.5-TP	0.001	mg/L	< 0.001	< 0.001	< 0.001
Actril (loxynil)	0.001	mg/L	< 0.001	< 0.001	< 0.001
Dicamba	0.001	mg/L	< 0.001	< 0.001	< 0.001
Dichlorprop	0.001	mg/L	< 0.001	< 0.001	< 0.001
Dinitro-o-cresol	0.001	mg/L	< 0.001	< 0.001	< 0.001
Dinoseb	0.001	mg/L	< 0.001	< 0.001	< 0.001
MCPA	0.001	mg/L	< 0.001	< 0.001	< 0.001
MCPB	0.001	mg/L	< 0.001	< 0.001	< 0.001
Mecoprop	0.001	mg/L	< 0.001	< 0.001	< 0.001
Warfarin (surr.)	1	%	60	[Q09A]1	74

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
Acid Herbicides	Melbourne	Feb 02, 2015	14 Day

- Method: MGT 530

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

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
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

Company Name: Coffey Environments P/L N'castle
Address: Lot 101, 19 Warabrook Boulevard
Warabrook
NSW 2304

Project Name: WINDERS LANE
Project ID: ENAUWARA04581AA

Order No.:
Report #: 445956
Phone: 02 4016 2300
Fax: 02 4016 2380

Received: Feb 2, 2015 10:06 AM
Due: Feb 3, 2015
Priority: 1 Day
Contact Name: Damien Hendrickx

Eurofins | mgt Client Manager: Mary Makarios

Sample Detail					Acid Herbicides	Moisture Set
Laboratory where analysis is conducted						
Melbourne Laboratory - NATA Site # 1254 & 14271					X	X
Sydney Laboratory - NATA Site # 18217						
Brisbane Laboratory - NATA Site # 20794						
External Laboratory						
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
SS1	Jan 14, 2015		Soil	M15-Fe00144	X	X
SS2	Jan 14, 2015		Soil	M15-Fe00145	X	X
SS3	Jan 14, 2015		Soil	M15-Fe00146	X	X
SS4	Jan 14, 2015		Soil	M15-Fe00147	X	X
SS5	Jan 14, 2015		Soil	M15-Fe00148	X	X
SS6	Jan 14, 2015		Soil	M15-Fe00149	X	X
SS7	Jan 14, 2015		Soil	M15-Fe00150	X	X
SS8	Jan 14, 2015		Soil	M15-Fe00151	X	X
SS9	Jan 14, 2015		Soil	M15-Fe00152	X	X

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Sample Detail					Acid Herbicides	Moisture Set
Laboratory where analysis is conducted						
Melbourne Laboratory - NATA Site # 1254 & 14271					X	X
Sydney Laboratory - NATA Site # 18217						
Brisbane Laboratory - NATA Site # 20794						
External Laboratory						
SS10	Jan 14, 2015		Soil	M15-Fe00153	X	X
SS11	Jan 14, 2015		Soil	M15-Fe00154	X	X
POND 1 SED 1	Jan 14, 2015		Soil	M15-Fe00155	X	X
POND 2 SED 2	Jan 14, 2015		Soil	M15-Fe00156	X	X
POND 3 SED 3	Jan 14, 2015		Soil	M15-Fe00157	X	X
POND 1 SW1	Jan 14, 2015		Water	M15-Fe00158	X	
POND 2 SW2	Jan 14, 2015		Water	M15-Fe00159	X	
POND 3 SW3	Jan 14, 2015		Water	M15-Fe00160	X	

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. 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.

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

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

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. 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.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
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 20-130%.

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, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene 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 Arochlor 1260 in Matrix Spikes and LCS's.
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 RPD's 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							
Acid Herbicides							
2.4-D	mg/L	< 0.001			0.001	Pass	
2.4-DB	mg/L	< 0.001			0.001	Pass	
2.4.5-T	mg/L	< 0.001			0.001	Pass	
2.4.5-TP	mg/L	< 0.001			0.001	Pass	
Actril (loxynil)	mg/L	< 0.001			0.001	Pass	
Dicamba	mg/L	< 0.001			0.001	Pass	
Dichlorprop	mg/L	< 0.001			0.001	Pass	
Dinitro-o-cresol	mg/L	< 0.001			0.001	Pass	
Dinoseb	mg/L	< 0.001			0.001	Pass	
MCPA	mg/L	< 0.001			0.001	Pass	
MCPB	mg/L	< 0.001			0.001	Pass	
Mecoprop	mg/L	< 0.001			0.001	Pass	
LCS - % Recovery							
Acid Herbicides							
2.4-D	%	79			70-130	Pass	
2.4-DB	%	76			70-130	Pass	
2.4.5-T	%	84			70-130	Pass	
2.4.5-TP	%	81			70-130	Pass	
Actril (loxynil)	%	73			70-130	Pass	
Dicamba	%	81			70-130	Pass	
Dichlorprop	%	80			70-130	Pass	
Dinitro-o-cresol	%	73			70-130	Pass	
Dinoseb	%	74			70-130	Pass	
MCPA	%	79			70-130	Pass	
MCPB	%	79			70-130	Pass	
Mecoprop	%	83			70-130	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	No
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
Q09A	The Surrogate recovery is outside of the recommended acceptance criteria due to matrix interference and is unquantifiable. A result of 1 has been reported for the purposes of providing a numerical result. Acceptance criteria were met for all other QC.

Authorised By

Mary Makarios	Analytical Services Manager
Carroll Lee	Senior Analyst-Organic (VIC)

Glenn Jackson

National Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

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Certificate of Analysis

Coffey Environments Pty Ltd Newcastle
Lot 101, 19 Warabrook Boulevard
Warabrook
NSW 2304

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: **Damien Hendrickx**

Report **539344-S**
Project name LOCHINVAR
Project ID 754-NTLEN202989
Received Date Mar 23, 2017

Client Sample ID			**SS12**	**SS13**	**SS14**	**SS15**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M17-Ma25965**	**M17-Ma25966**	**M17-Ma25967**	**M17-Ma25968**
Date Sampled			**Mar 20, 2017**	**Mar 20, 2017**	**Mar 20, 2017**	**Mar 20, 2017**
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	%	53	-	50	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	< 50	-
TRH C6-C10	20	mg/kg	< 20	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			SS12	SS13	SS14	SS15
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M17-Ma25965	M17-Ma25966	M17-Ma25967	M17-Ma25968
Date Sampled			Mar 20, 2017	Mar 20, 2017	Mar 20, 2017	Mar 20, 2017
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	131	89	124	100
p-Terphenyl-d14 (surr.)	1	%	93	82	96	88
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	-	0.31	-
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	-
Dibutylchlorendate (surr.)	1	%	116	-	108	-
Tetrachloro-m-xylene (surr.)	1	%	97	-	84	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	-	< 0.2	-
Bolstar	0.2	mg/kg	< 0.2	-	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	-	< 0.2	-
Chlorpyrifos	0.2	mg/kg	< 0.2	-	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-	< 0.2	-
Coumaphos	2	mg/kg	< 2	-	< 2	-
Demeton-S	0.2	mg/kg	< 0.2	-	< 0.2	-
Demeton-O	0.2	mg/kg	< 0.2	-	< 0.2	-
Diazinon	0.2	mg/kg	< 0.2	-	< 0.2	-
Dichlorvos	0.2	mg/kg	< 0.2	-	< 0.2	-
Dimethoate	0.2	mg/kg	< 0.2	-	< 0.2	-
Disulfoton	0.2	mg/kg	< 0.2	-	< 0.2	-
EPN	0.2	mg/kg	< 0.2	-	< 0.2	-
Ethion	0.2	mg/kg	< 0.2	-	< 0.2	-
Ethoprop	0.2	mg/kg	< 0.2	-	< 0.2	-
Ethyl parathion	0.2	mg/kg	< 0.2	-	< 0.2	-
Fenitrothion	0.2	mg/kg	< 0.2	-	< 0.2	-
Fensulfothion	0.2	mg/kg	< 0.2	-	< 0.2	-

Client Sample ID			SS12	SS13	SS14	SS15
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M17-Ma25965	M17-Ma25966	M17-Ma25967	M17-Ma25968
Date Sampled			Mar 20, 2017	Mar 20, 2017	Mar 20, 2017	Mar 20, 2017
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Fenthion	0.2	mg/kg	< 0.2	-	< 0.2	-
Malathion	0.2	mg/kg	< 0.2	-	< 0.2	-
Merphos	0.2	mg/kg	< 0.2	-	< 0.2	-
Methyl parathion	0.2	mg/kg	< 0.2	-	< 0.2	-
Mevinphos	0.2	mg/kg	< 0.2	-	< 0.2	-
Monocrotophos	2	mg/kg	< 2	-	< 2	-
Naled	0.2	mg/kg	< 0.2	-	< 0.2	-
Omethoate	2	mg/kg	< 2	-	< 2	-
Phorate	0.2	mg/kg	< 0.2	-	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-	< 0.2	-
Pyrazophos	0.2	mg/kg	< 0.2	-	< 0.2	-
Ronnel	0.2	mg/kg	< 0.2	-	< 0.2	-
Terbufos	0.2	mg/kg	< 0.2	-	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-	< 0.2	-
Tokuthion	0.2	mg/kg	< 0.2	-	< 0.2	-
Trichloronate	0.2	mg/kg	< 0.2	-	< 0.2	-
Triphenylphosphate (surr.)	1	%	101	-	111	-
Acid Herbicides						
2.4-D	0.5	mg/kg	< 0.5	-	< 0.5	-
2.4-DB	0.5	mg/kg	< 0.5	-	< 0.5	-
2.4.5-T	0.5	mg/kg	< 0.5	-	< 0.5	-
2.4.5-TP	0.5	mg/kg	< 0.5	-	< 0.5	-
Actril (loxynil)	0.5	mg/kg	< 0.5	-	< 0.5	-
Dicamba	0.5	mg/kg	< 0.5	-	< 0.5	-
Dichlorprop	0.5	mg/kg	< 0.5	-	< 0.5	-
Dinitro-o-cresol	0.5	mg/kg	< 0.5	-	< 0.5	-
Dinoseb	0.5	mg/kg	< 0.5	-	< 0.5	-
MCPA	0.5	mg/kg	< 0.5	-	< 0.5	-
MCPB	0.5	mg/kg	< 0.5	-	< 0.5	-
Mecoprop	0.5	mg/kg	< 0.5	-	< 0.5	-
Warfarin (surr.)	1	%	112	-	108	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	-	< 50	-
TRH >C16-C34	100	mg/kg	< 100	-	< 100	-
TRH >C34-C40	100	mg/kg	< 100	-	< 100	-
% Moisture	1	%	28	18	19	23
Heavy Metals						
Arsenic	2	mg/kg	2.0	3.2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	96	44	93	43
Copper	5	mg/kg	45	28	42	22
Lead	5	mg/kg	19	21	23	10
Mercury	0.1	mg/kg	0.1	0.1	< 0.1	< 0.1
Nickel	5	mg/kg	50	40	63	28
Zinc	5	mg/kg	120	120	460	87

Client Sample ID			SS16	SS17	SS18	SS19
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M17-Ma25969	M17-Ma25970	M17-Ma25971	M17-Ma25972
Date Sampled			Mar 20, 2017	Mar 20, 2017	Mar 20, 2017	Mar 20, 2017
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	320	51	-	-
TRH C29-C36	50	mg/kg	340	130	-	-
TRH C10-36 (Total)	50	mg/kg	660	181	-	-
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	85	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-	-
TRH C6-C10	20	mg/kg	< 20	< 20	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	108	116	87	93
p-Terphenyl-d14 (surr.)	1	%	89	90	90	79
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	-	-

Client Sample ID			SS16	SS17	SS18	SS19
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M17-Ma25969	M17-Ma25970	M17-Ma25971	M17-Ma25972
Date Sampled			Mar 20, 2017	Mar 20, 2017	Mar 20, 2017	Mar 20, 2017
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
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	-	-
Dibutylchlorendate (surr.)	1	%	109	126	-	-
Tetrachloro-m-xylene (surr.)	1	%	92	105	-	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	-
Bolstar	0.2	mg/kg	< 0.2	< 0.2	-	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	-	-
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	-	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	-
Coumaphos	2	mg/kg	< 2	< 2	-	-
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	-	-
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	-	-
Diazinon	0.2	mg/kg	< 0.2	< 0.2	-	-
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	-	-
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	-	-
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	-	-
EPN	0.2	mg/kg	< 0.2	< 0.2	-	-
Ethion	0.2	mg/kg	< 0.2	< 0.2	-	-
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	-	-
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	-	-
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	-	-
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	-	-
Fenthion	0.2	mg/kg	< 0.2	< 0.2	-	-
Malathion	0.2	mg/kg	< 0.2	< 0.2	-	-
Merphos	0.2	mg/kg	< 0.2	< 0.2	-	-
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	-	-
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	-	-
Monocrotophos	2	mg/kg	< 2	< 2	-	-
Naled	0.2	mg/kg	< 0.2	< 0.2	-	-
Omethoate	2	mg/kg	< 2	< 2	-	-
Phorate	0.2	mg/kg	< 0.2	< 0.2	-	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	-
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	-	-
Ronnel	0.2	mg/kg	< 0.2	< 0.2	-	-
Terbufos	0.2	mg/kg	< 0.2	< 0.2	-	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	-	-

Client Sample ID			SS16	SS17	SS18	SS19
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M17-Ma25969	M17-Ma25970	M17-Ma25971	M17-Ma25972
Date Sampled			Mar 20, 2017	Mar 20, 2017	Mar 20, 2017	Mar 20, 2017
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	-	-
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	-	-
Triphenylphosphate (surr.)	1	%	92	75	-	-
Acid Herbicides						
2.4-D	0.5	mg/kg	< 0.5	< 0.5	-	-
2.4-DB	0.5	mg/kg	< 0.5	< 0.5	-	-
2.4.5-T	0.5	mg/kg	< 0.5	< 0.5	-	-
2.4.5-TP	0.5	mg/kg	< 0.5	< 0.5	-	-
Actril (loxynil)	0.5	mg/kg	< 0.5	< 0.5	-	-
Dicamba	0.5	mg/kg	< 0.5	< 0.5	-	-
Dichlorprop	0.5	mg/kg	< 0.5	< 0.5	-	-
Dinitro-o-cresol	0.5	mg/kg	< 0.5	< 0.5	-	-
Dinoseb	0.5	mg/kg	< 0.5	< 0.5	-	-
MCPA	0.5	mg/kg	< 0.5	< 0.5	-	-
MCPB	0.5	mg/kg	< 0.5	< 0.5	-	-
Mecoprop	0.5	mg/kg	< 0.5	< 0.5	-	-
Warfarin (surr.)	1	%	82	84	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	-	-
TRH >C16-C34	100	mg/kg	590	170	-	-
TRH >C34-C40	100	mg/kg	220	110	-	-
% Moisture	1	%	13	19	19	9.8
Heavy Metals						
Arsenic	2	mg/kg	6.0	3.1	2.5	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	16	39	29	17
Copper	5	mg/kg	11	23	24	6.7
Lead	5	mg/kg	14	8.9	6.8	7.0
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	18	37	28	13
Zinc	5	mg/kg	93	49	35	48

Client Sample ID			SS20	SS21	SS22	SS23
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M17-Ma25973	M17-Ma25974	M17-Ma25975	M17-Ma25976
Date Sampled			Mar 20, 2017	Mar 20, 2017	Mar 20, 2017	Mar 20, 2017
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	-	-
TRH C10-C14	20	mg/kg	28	< 20	-	-
TRH C15-C28	50	mg/kg	1200	< 50	-	-
TRH C29-C36	50	mg/kg	440	< 50	-	-
TRH C10-36 (Total)	50	mg/kg	1668	< 50	-	-

Client Sample ID			SS20	SS21	SS22	SS23
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M17-Ma25973	M17-Ma25974	M17-Ma25975	M17-Ma25976
Date Sampled			Mar 20, 2017	Mar 20, 2017	Mar 20, 2017	Mar 20, 2017
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	%	71	69	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-	-
TRH C6-C10	20	mg/kg	< 20	< 20	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	-
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	%	81	107	-	-
p-Terphenyl-d14 (surr.)	1	%	61	92	-	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			SS20	SS21	SS22	SS23
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M17-Ma25973	M17-Ma25974	M17-Ma25975	M17-Ma25976
Date Sampled			Mar 20, 2017	Mar 20, 2017	Mar 20, 2017	Mar 20, 2017
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	59	117	120	123
Tetrachloro-m-xylene (surr.)	1	%	96	97	107	97
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	3.0	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	89	88	88	87

Client Sample ID			SS20	SS21	SS22	SS23
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M17-Ma25973	M17-Ma25974	M17-Ma25975	M17-Ma25976
Date Sampled			Mar 20, 2017	Mar 20, 2017	Mar 20, 2017	Mar 20, 2017
Test/Reference	LOR	Unit				
Acid Herbicides						
2.4-D	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-DB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-T	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-TP	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Actril (loxynil)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dicamba	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dinitro-o-cresol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dinoseb	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
MCPA	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
MCPB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Mecoprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Warfarin (surr.)	1	%	82	86	96	82
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	-	-
TRH >C16-C34	100	mg/kg	1400	< 100	-	-
TRH >C34-C40	100	mg/kg	210	< 100	-	-
% Clay	1	%	7.5	-	-	-
Conductivity (1:5 aqueous extract at 25°C)	10	uS/cm	130	-	-	-
pH (1:5 Aqueous extract)	0.1	pH Units	5.3	-	-	-
% Moisture	1	%	12	25	31	24
Ion Exchange Properties						
Cation Exchange Capacity	0.05	meq/100g	27	-	-	-
Heavy Metals						
Arsenic	2	mg/kg	4.9	2.4	2.7	11
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	19	190	120	80
Copper	5	mg/kg	16	63	27	20
Lead	5	mg/kg	< 5	28	13	16
Mercury	0.1	mg/kg	< 0.1	< 0.1	0.1	< 0.1
Nickel	5	mg/kg	15	49	52	36
Zinc	5	mg/kg	82	84	27	37

Client Sample ID			SP1	SS24	QC6	QC7
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M17-Ma25977	M17-Ma25978	M17-Ma25981	M17-Ma25982
Date Sampled			Mar 20, 2017	Mar 20, 2017	Mar 20, 2017	Mar 20, 2017
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	-	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	-	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	-	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	-	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	-	< 50

Client Sample ID			SP1	SS24	QC6	QC7
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M17-Ma25977	M17-Ma25978	M17-Ma25981	M17-Ma25982
Date Sampled			Mar 20, 2017	Mar 20, 2017	Mar 20, 2017	Mar 20, 2017
Test/Reference	LOR	Unit				
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	%	53	71	-	56
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	-	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	101	114	-	132
p-Terphenyl-d14 (surr.)	1	%	78	86	-	105
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	-	-	0.15
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

Client Sample ID			SP1	SS24	QC6	QC7
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M17-Ma25977	M17-Ma25978	M17-Ma25981	M17-Ma25982
Date Sampled			Mar 20, 2017	Mar 20, 2017	Mar 20, 2017	Mar 20, 2017
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
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
Dibutylchlorendate (surr.)	1	%	136	-	-	120
Tetrachloro-m-xylene (surr.)	1	%	102	-	-	97
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Bolstar	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Coumaphos	2	mg/kg	< 2	-	-	< 2
Demeton-S	0.2	mg/kg	< 0.2	-	-	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	-	-	< 0.2
Diazinon	0.2	mg/kg	< 0.2	-	-	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	-	-	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	-	-	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	-	-	< 0.2
EPN	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethion	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fenthion	0.2	mg/kg	< 0.2	-	-	< 0.2
Malathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Merphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Monocrotophos	2	mg/kg	< 2	-	-	< 2
Naled	0.2	mg/kg	< 0.2	-	-	< 0.2
Omethoate	2	mg/kg	< 2	-	-	< 2
Phorate	0.2	mg/kg	< 0.2	-	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	-	-	< 0.2
Ronnel	0.2	mg/kg	< 0.2	-	-	< 0.2
Terbufos	0.2	mg/kg	< 0.2	-	-	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	-	-	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	-	-	< 0.2
Triphenylphosphate (surr.)	1	%	89	-	-	86

Client Sample ID			SP1	SS24	QC6	QC7
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M17-Ma25977	M17-Ma25978	M17-Ma25981	M17-Ma25982
Date Sampled			Mar 20, 2017	Mar 20, 2017	Mar 20, 2017	Mar 20, 2017
Test/Reference	LOR	Unit				
Acid Herbicides						
2.4-D	0.5	mg/kg	< 0.5	-	-	< 0.5
2.4-DB	0.5	mg/kg	< 0.5	-	-	< 0.5
2.4.5-T	0.5	mg/kg	< 0.5	-	-	< 0.5
2.4.5-TP	0.5	mg/kg	< 0.5	-	-	< 0.5
Actril (loxynil)	0.5	mg/kg	< 0.5	-	-	< 0.5
Dicamba	0.5	mg/kg	< 0.5	-	-	< 0.5
Dichlorprop	0.5	mg/kg	< 0.5	-	-	< 0.5
Dinitro-o-cresol	0.5	mg/kg	< 0.5	-	-	< 0.5
Dinoseb	0.5	mg/kg	< 0.5	-	-	< 0.5
MCPA	0.5	mg/kg	< 0.5	-	-	< 0.5
MCPB	0.5	mg/kg	< 0.5	-	-	< 0.5
Mecoprop	0.5	mg/kg	< 0.5	-	-	< 0.5
Warfarin (surr.)	1	%	94	-	-	82
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	-	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	-	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	-	< 100
% Moisture	1	%	23	24	14	19
Heavy Metals						
Arsenic	2	mg/kg	2.5	< 2	5.1	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	110	78	25	99
Copper	5	mg/kg	82	20	17	43
Lead	5	mg/kg	6.9	12	< 5	18
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	98	24	20	63
Zinc	5	mg/kg	65	23	99	380

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	Mar 27, 2017	14 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Mar 27, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Mar 27, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
BTEX	Melbourne	Mar 27, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Melbourne	Mar 27, 2017	14 Day
- Method: USEPA 8270 Polycyclic Aromatic Hydrocarbons			
Acid Herbicides	Melbourne	Mar 27, 2017	14 Day
- Method: LTM-ORG-2180 Phenoxy Acid Herbicides			
% Clay	Brisbane	Mar 28, 2017	6 Day
- Method: LTM-GEN-7040			
pH (1:5 Aqueous extract)	Melbourne	Mar 27, 2017	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Metals M8	Melbourne	Mar 27, 2017	28 Days
- Method: LTM-MET-3030 by ICP-OES (hydride ICP-OES for Mercury)			
Eurofins | mgt Suite B14			
Organochlorine Pesticides	Melbourne	Mar 27, 2017	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Melbourne	Mar 27, 2017	14 Day
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Conductivity (1:5 aqueous extract at 25°C)	Melbourne	Mar 27, 2017	7 Day
- Method: LTM-INO-4030			
Ion Exchange Properties	Melbourne	Mar 28, 2017	
% Moisture	Melbourne	Mar 24, 2017	14 Day
- Method: LTM-GEN-7080 Moisture			

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Company Name: Coffey Environments P/L N'castle
Address: Lot 101, 19 Warabrook Boulevard
Warabrook
NSW 2304

Project Name: LOCHINVAR
Project ID: 754-NTLEN202989

Order No.:
Report #: 539344
Phone: 02 4016 2300
Fax: 02 4016 2380

Received: Mar 23, 2017 8:30 AM
Due: Mar 30, 2017
Priority: 5 Day
Contact Name: Damien Hendrickx

Eurofins | mgt Analytical Services Manager : Mary Makarios

Sample Detail						% Clay	HOLD	pH (1:5 Aqueous extract)	Polycyclic Aromatic Hydrocarbons	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite B14	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																
Brisbane Laboratory - NATA Site # 20794						X										
Perth Laboratory - NATA Site # 18217																
External Laboratory																
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
1	SS12	Mar 20, 2017		Soil	M17-Ma25965				X	X	X	X	X	X		X
2	SS13	Mar 20, 2017		Soil	M17-Ma25966				X		X			X		
3	SS14	Mar 20, 2017		Soil	M17-Ma25967				X	X	X	X	X	X		X
4	SS15	Mar 20, 2017		Soil	M17-Ma25968				X		X			X		
5	SS16	Mar 20, 2017		Soil	M17-Ma25969				X	X	X	X	X	X		X
6	SS17	Mar 20, 2017		Soil	M17-Ma25970				X	X	X	X	X	X		X
7	SS18	Mar 20, 2017		Soil	M17-Ma25971				X		X			X		
8	SS19	Mar 20, 2017		Soil	M17-Ma25972				X		X			X		
9	SS20	Mar 20, 2017		Soil	M17-Ma25973	X		X	X	X	X	X	X	X	X	X

eurofins | mgt

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Eurofins | mgt Analytical Services Manager : Mary Makarios

Sample Detail						% Clay	HOLD	pH (1:5 Aqueous extract)	Polycyclic Aromatic Hydrocarbons	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite B14	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																
Brisbane Laboratory - NATA Site # 20794						X										
Perth Laboratory - NATA Site # 18217																
10	SS21	Mar 20, 2017		Soil	M17-Ma25974				X	X	X	X	X	X		X
11	SS22	Mar 20, 2017		Soil	M17-Ma25975					X	X		X	X		
12	SS23	Mar 20, 2017		Soil	M17-Ma25976					X	X		X	X		
13	SP1	Mar 20, 2017		Soil	M17-Ma25977				X	X	X	X	X	X		X
14	SS24	Mar 20, 2017		Soil	M17-Ma25978				X		X	X		X		X
15	POND 4-SW4	Mar 20, 2017		Water	M17-Ma25979					X	X		X			
16	POND 5-SW5	Mar 20, 2017		Water	M17-Ma25980					X	X		X			
17	QC6	Mar 20, 2017		Soil	M17-Ma25981						X			X		
18	QC7	Mar 20, 2017		Soil	M17-Ma25982				X	X	X	X	X	X		X
19	QC9	Mar 20, 2017		Water	M17-Ma25983				X	X	X	X	X			X
20	SS25	Mar 20, 2017		Soil	M17-Ma25984		X									
Test Counts						1	1	1	14	13	19	10	13	16	1	10

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. 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.

****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. 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.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
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 20-130%

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	
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	
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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Acid Herbicides							
2.4-D	mg/kg	< 0.5			0.5	Pass	
2.4-DB	mg/kg	< 0.5			0.5	Pass	
2.4.5-T	mg/kg	< 0.5			0.5	Pass	
2.4.5-TP	mg/kg	< 0.5			0.5	Pass	
Actril (loxynil)	mg/kg	< 0.5			0.5	Pass	
Dicamba	mg/kg	< 0.5			0.5	Pass	
Dichlorprop	mg/kg	< 0.5			0.5	Pass	
Dinitro-o-cresol	mg/kg	< 0.5			0.5	Pass	
Dinoseb	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
MCPA	mg/kg	< 0.5			0.5	Pass	
MCPB	mg/kg	< 0.5			0.5	Pass	
Mecoprop	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
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							
% Clay	%	< 1			1	Pass	
Method Blank							
Ion Exchange Properties							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	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	%	124			70-130	Pass	
TRH C10-C14	%	76			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	95			70-130	Pass	
Toluene	%	113			70-130	Pass	
Ethylbenzene	%	124			70-130	Pass	
m&p-Xylenes	%	123			70-130	Pass	
Xylenes - Total	%	123			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	116			70-130	Pass	
TRH C6-C10	%	111			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	93			70-130	Pass	
Acenaphthylene	%	90			70-130	Pass	
Anthracene	%	82			70-130	Pass	
Benz(a)anthracene	%	117			70-130	Pass	
Benzo(a)pyrene	%	119			70-130	Pass	
Benzo(b&j)fluoranthene	%	111			70-130	Pass	
Benzo(g.h.i)perylene	%	79			70-130	Pass	
Benzo(k)fluoranthene	%	108			70-130	Pass	
Chrysene	%	116			70-130	Pass	
Dibenz(a.h)anthracene	%	79			70-130	Pass	
Fluoranthene	%	72			70-130	Pass	
Fluorene	%	87			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	78			70-130	Pass	
Naphthalene	%	127			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Phenanthrene	%	87			70-130	Pass	
Pyrene	%	77			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4.4'-DDD	%	117			70-130	Pass	
4.4'-DDE	%	107			70-130	Pass	
4.4'-DDT	%	122			70-130	Pass	
a-BHC	%	102			70-130	Pass	
Aldrin	%	102			70-130	Pass	
b-BHC	%	106			70-130	Pass	
d-BHC	%	113			70-130	Pass	
Dieldrin	%	101			70-130	Pass	
Endosulfan I	%	105			70-130	Pass	
Endosulfan II	%	118			70-130	Pass	
Endosulfan sulphate	%	109			70-130	Pass	
Endrin	%	108			70-130	Pass	
Endrin aldehyde	%	117			70-130	Pass	
Endrin ketone	%	123			70-130	Pass	
g-BHC (Lindane)	%	105			70-130	Pass	
Heptachlor	%	97			70-130	Pass	
Heptachlor epoxide	%	104			70-130	Pass	
Hexachlorobenzene	%	95			70-130	Pass	
Methoxychlor	%	118			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	92			70-130	Pass	
Dimethoate	%	78			70-130	Pass	
Ethion	%	75			70-130	Pass	
Fenitrothion	%	90			70-130	Pass	
Methyl parathion	%	79			70-130	Pass	
Mevinphos	%	77			70-130	Pass	
LCS - % Recovery							
Acid Herbicides							
2.4-D	%	100			70-130	Pass	
2.4-DB	%	85			70-130	Pass	
2.4.5-T	%	106			70-130	Pass	
2.4.5-TP	%	105			70-130	Pass	
Actril (loxynil)	%	87			70-130	Pass	
Dicamba	%	93			70-130	Pass	
Dichlorprop	%	96			70-130	Pass	
Dinitro-o-cresol	%	75			70-130	Pass	
Dinoseb	%	77			70-130	Pass	
MCPA	%	108			70-130	Pass	
MCPB	%	86			70-130	Pass	
Mecoprop	%	83			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	76			70-130	Pass	
LCS - % Recovery							
% Clay	%	100			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	110			80-120	Pass	
Cadmium	%	112			80-120	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chromium			%	106			80-120	Pass	
Copper			%	98			80-120	Pass	
Lead			%	112			80-120	Pass	
Mercury			%	109			75-125	Pass	
Nickel			%	98			80-120	Pass	
Zinc			%	113			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 C6-C9	M17-Ma26401	NCP	%	106			70-130	Pass	
TRH C10-C14	B17-Ma25488	NCP	%	78			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M17-Ma26401	NCP	%	100			70-130	Pass	
Toluene	M17-Ma26401	NCP	%	107			70-130	Pass	
Ethylbenzene	M17-Ma26401	NCP	%	117			70-130	Pass	
m&p-Xylenes	M17-Ma26401	NCP	%	126			70-130	Pass	
o-Xylene	M17-Ma26401	NCP	%	104			70-130	Pass	
Xylenes - Total	M17-Ma26401	NCP	%	119			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M17-Ma26401	NCP	%	114			70-130	Pass	
TRH C6-C10	M17-Ma26401	NCP	%	111			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	P17-Ma25848	NCP	%	95			70-130	Pass	
Acenaphthylene	P17-Ma25848	NCP	%	96			70-130	Pass	
Anthracene	P17-Ma25848	NCP	%	110			70-130	Pass	
Benz(a)anthracene	P17-Ma25848	NCP	%	89			70-130	Pass	
Benzo(a)pyrene	P17-Ma25848	NCP	%	101			70-130	Pass	
Benzo(b&j)fluoranthene	P17-Ma25848	NCP	%	71			70-130	Pass	
Benzo(g.h.i)perylene	P17-Ma25848	NCP	%	96			70-130	Pass	
Benzo(k)fluoranthene	P17-Ma25848	NCP	%	128			70-130	Pass	
Chrysene	P17-Ma25848	NCP	%	110			70-130	Pass	
Dibenz(a.h)anthracene	P17-Ma25848	NCP	%	101			70-130	Pass	
Fluoranthene	P17-Ma25848	NCP	%	93			70-130	Pass	
Fluorene	P17-Ma25848	NCP	%	93			70-130	Pass	
Indeno(1.2.3-cd)pyrene	P17-Ma25848	NCP	%	93			70-130	Pass	
Naphthalene	P17-Ma25848	NCP	%	93			70-130	Pass	
Phenanthrene	P17-Ma25848	NCP	%	97			70-130	Pass	
Pyrene	P17-Ma25848	NCP	%	93			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S17-Ma25372	NCP	%	128			70-130	Pass	
Dimethoate	S17-Ma25372	NCP	%	89			70-130	Pass	
Ethion	S17-Ma25372	NCP	%	91			70-130	Pass	
Fenitrothion	S17-Ma25372	NCP	%	119			70-130	Pass	
Methyl parathion	S17-Ma25372	NCP	%	88			70-130	Pass	
Mevinphos	S17-Ma25372	NCP	%	88			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	B17-Ma25488	NCP	%	78			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Arsenic	M17-Ma25966	CP	%	107			75-125	Pass	
Cadmium	M17-Ma25966	CP	%	115			75-125	Pass	
Chromium	M17-Ma25966	CP	%	124			75-125	Pass	
Copper	M17-Ma25966	CP	%	121			75-125	Pass	
Lead	M17-Ma25966	CP	%	133			75-125	Fail	Q08
Mercury	M17-Ma25966	CP	%	102			70-130	Pass	
Nickel	M17-Ma25966	CP	%	118			75-125	Pass	
Zinc	M17-Ma25966	CP	%	98			75-125	Pass	
Spike - % Recovery									
Acid Herbicides				Result 1					
2.4-D	M17-Ma25967	CP	%	110			70-130	Pass	
Actril (loxynil)	M17-Ma25967	CP	%	106			70-130	Pass	
Dichlorprop	M17-Ma25967	CP	%	120			70-130	Pass	
MCPA	M17-Ma25967	CP	%	120			70-130	Pass	
MCPB	M17-Ma25967	CP	%	85			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	M17-Ma25974	CP	%	127			70-130	Pass	
4.4'-DDE	M17-Ma25974	CP	%	107			70-130	Pass	
4.4'-DDT	M17-Ma25974	CP	%	130			70-130	Pass	
a-BHC	M17-Ma25974	CP	%	108			70-130	Pass	
Aldrin	M17-Ma25974	CP	%	95			70-130	Pass	
b-BHC	M17-Ma25974	CP	%	84			70-130	Pass	
d-BHC	M17-Ma25974	CP	%	108			70-130	Pass	
Dieldrin	M17-Ma25974	CP	%	105			70-130	Pass	
Endosulfan I	M17-Ma25974	CP	%	107			70-130	Pass	
Endosulfan II	M17-Ma25974	CP	%	121			70-130	Pass	
Endosulfan sulphate	M17-Ma25974	CP	%	116			70-130	Pass	
Endrin	M17-Ma25974	CP	%	119			70-130	Pass	
Endrin aldehyde	M17-Ma25974	CP	%	119			70-130	Pass	
Endrin ketone	M17-Ma25974	CP	%	120			70-130	Pass	
g-BHC (Lindane)	M17-Ma25974	CP	%	107			70-130	Pass	
Heptachlor	M17-Ma25974	CP	%	78			70-130	Pass	
Heptachlor epoxide	M17-Ma25974	CP	%	100			70-130	Pass	
Hexachlorobenzene	M17-Ma25974	CP	%	98			70-130	Pass	
Methoxychlor	M17-Ma25974	CP	%	124			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M17-Ma25976	CP	%	86			75-125	Pass	
Cadmium	M17-Ma25976	CP	%	96			75-125	Pass	
Chromium	M17-Ma25976	CP	%	101			75-125	Pass	
Copper	M17-Ma25976	CP	%	105			75-125	Pass	
Lead	M17-Ma25976	CP	%	112			75-125	Pass	
Mercury	M17-Ma25976	CP	%	108			70-130	Pass	
Nickel	M17-Ma25976	CP	%	104			75-125	Pass	
Zinc	M17-Ma25976	CP	%	102			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M17-Ma26400	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	B17-Ma25487	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	B17-Ma25487	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	B17-Ma25487	NCP	mg/kg	< 50	< 50	<1	30%	Pass	

Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M17-Ma26400	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	M17-Ma26400	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	M17-Ma26400	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	M17-Ma26400	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	M17-Ma26400	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	M17-Ma26400	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M17-Ma26400	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M17-Ma26400	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Endrin ketone	M17-Ma26964	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Acid Herbicides				Result 1	Result 2	RPD			
2.4-D	M17-Ma23878	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-DB	M17-Ma23878	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-T	M17-Ma23878	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-TP	M17-Ma23878	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Actril (loxynil)	M17-Ma23878	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dicamba	M17-Ma23878	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorprop	M17-Ma23878	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinitro-o-cresol	M17-Ma23878	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinoseb	M17-Ma23878	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPA	M17-Ma23878	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPB	M17-Ma23878	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mecoprop	M17-Ma23878	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	B17-Ma25487	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	B17-Ma25487	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	B17-Ma25487	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M17-Ma25965	CP	mg/kg	2.0	2.1	3.0	30%	Pass	
Cadmium	M17-Ma25965	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M17-Ma25965	CP	mg/kg	96	86	11	30%	Pass	
Copper	M17-Ma25965	CP	mg/kg	45	39	13	30%	Pass	
Lead	M17-Ma25965	CP	mg/kg	19	19	2.0	30%	Pass	
Mercury	M17-Ma25965	CP	mg/kg	0.1	0.1	8.0	30%	Pass	
Nickel	M17-Ma25965	CP	mg/kg	50	43	15	30%	Pass	
Zinc	M17-Ma25965	CP	mg/kg	120	120	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M17-Ma25966	CP	mg/kg	3.2	3.2	1.0	30%	Pass	
Cadmium	M17-Ma25966	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M17-Ma25966	CP	mg/kg	44	44	1.0	30%	Pass	
Copper	M17-Ma25966	CP	mg/kg	28	29	1.0	30%	Pass	
Lead	M17-Ma25966	CP	mg/kg	21	21	2.0	30%	Pass	
Mercury	M17-Ma25966	CP	mg/kg	0.1	0.1	10	30%	Pass	
Nickel	M17-Ma25966	CP	mg/kg	40	40	1.0	30%	Pass	
Zinc	M17-Ma25966	CP	mg/kg	120	120	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M17-Ma25967	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M17-Ma25967	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M17-Ma25967	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M17-Ma25967	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M17-Ma25967	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M17-Ma25967	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M17-Ma25967	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M17-Ma25967	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M17-Ma25967	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M17-Ma25967	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M17-Ma25967	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M17-Ma25967	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M17-Ma25967	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M17-Ma25967	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M17-Ma25967	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M17-Ma25967	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	M17-Ma25967	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	M17-Ma25967	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	M17-Ma25967	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	M17-Ma25967	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M17-Ma25973	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	M17-Ma25973	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	M17-Ma25973	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	M17-Ma25973	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	M17-Ma25973	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M17-Ma25973	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	M17-Ma25973	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	M17-Ma25973	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	M17-Ma25973	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	M17-Ma25973	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	M17-Ma25973	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	M17-Ma25973	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	M17-Ma25973	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	M17-Ma25973	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	M17-Ma25973	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	M17-Ma25973	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	M17-Ma25973	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	M17-Ma25973	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	M17-Ma25973	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	M17-Ma25973	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Clay	M17-Ma24089	NCP	%	5.0	5.0	<1	30%	Pass	
Conductivity (1:5 aqueous extract at 25°C)	M17-Ma26158	NCP	uS/cm	61	59	4.0	30%	Pass	
pH (1:5 Aqueous extract)	M17-Ma26168	NCP	pH Units	8.4	8.5	pass	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M17-Ma25974	CP	%	25	25	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M17-Ma25975	CP	mg/kg	2.7	3.2	17	30%	Pass	
Cadmium	M17-Ma25975	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M17-Ma25975	CP	mg/kg	120	130	7.0	30%	Pass	
Copper	M17-Ma25975	CP	mg/kg	27	29	7.0	30%	Pass	
Lead	M17-Ma25975	CP	mg/kg	13	14	7.0	30%	Pass	
Mercury	M17-Ma25975	CP	mg/kg	0.1	< 0.1	4.0	30%	Pass	
Nickel	M17-Ma25975	CP	mg/kg	52	53	1.0	30%	Pass	
Zinc	M17-Ma25975	CP	mg/kg	27	34	22	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M17-Ma25976	CP	mg/kg	11	11	<1	30%	Pass	
Cadmium	M17-Ma25976	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M17-Ma25976	CP	mg/kg	80	80	<1	30%	Pass	
Copper	M17-Ma25976	CP	mg/kg	20	20	1.0	30%	Pass	
Lead	M17-Ma25976	CP	mg/kg	16	16	<1	30%	Pass	
Mercury	M17-Ma25976	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	M17-Ma25976	CP	mg/kg	36	36	1.0	30%	Pass	
Zinc	M17-Ma25976	CP	mg/kg	37	37	<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

Authorised By

Mary Makarios	Analytical Services Manager
Alex Petridis	Senior Analyst-Metal (VIC)
Alex Petridis	Senior Analyst-Organic (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)
Jonathon Angell	Senior Analyst-Inorganic (QLD)
Joseph Edouard	Senior Analyst-Organic (VIC)

Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

eurofins | mgt

Certificate of Analysis

Coffey Environments Pty Ltd Newcastle
Lot 101, 19 Warabrook Boulevard
Warabrook
NSW 2304

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: **Damien Hendrickx**

Report **539344-W**
Project name LOCHINVAR
Project ID 754-NTLEN202989
Received Date Mar 23, 2017

Client Sample ID			**POND 4-SW4**	**POND 5-SW5**	**QC9**
Sample Matrix			**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**M17-Ma25979**	**M17-Ma25980**	**M17-Ma25983**
Date Sampled			**Mar 20, 2017**	**Mar 20, 2017**	**Mar 20, 2017**
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	%	-	-	87
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.01	mg/L	-	-	< 0.01
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	-	-	< 0.05
TRH C6-C10	0.02	mg/L	-	-	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	-	-	< 0.02
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

Client Sample ID			POND 4-SW4	POND 5-SW5	QC9
Sample Matrix			Water	Water	Water
Eurofins | mgt Sample No.			M17-Ma25979	M17-Ma25980	M17-Ma25983
Date Sampled			Mar 20, 2017	Mar 20, 2017	Mar 20, 2017
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
Total PAH*	0.001	mg/L	-	-	< 0.001
2-Fluorobiphenyl (surr.)	1	%	-	-	77
p-Terphenyl-d14 (surr.)	1	%	-	-	119
Organochlorine Pesticides					
Chlordanes - Total	0.001	mg/L	< 0.001	< 0.001	< 0.001
4.4'-DDD	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
4.4'-DDE	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
4.4'-DDT	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
a-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Aldrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
b-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
d-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Dieldrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Endosulfan I	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Endosulfan II	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Endosulfan sulphate	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Endrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Endrin aldehyde	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Endrin ketone	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Heptachlor	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Heptachlor epoxide	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Hexachlorobenzene	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Methoxychlor	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Toxaphene	0.01	mg/L	< 0.01	< 0.01	< 0.01
Dibutylchlorendate (surr.)	1	%	99	70	75
Tetrachloro-m-xylene (surr.)	1	%	81	50	64
Organophosphorus Pesticides					
Azinphos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002
Bolstar	0.002	mg/L	< 0.002	< 0.002	< 0.002
Chlorfenvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002
Chlorpyrifos	0.02	mg/L	< 0.02	< 0.02	< 0.02
Chlorpyrifos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002
Coumaphos	0.02	mg/L	< 0.02	< 0.02	< 0.02
Demeton-S	0.02	mg/L	< 0.02	< 0.02	< 0.02
Demeton-O	0.002	mg/L	< 0.002	< 0.002	< 0.002
Diazinon	0.002	mg/L	< 0.002	< 0.002	< 0.002
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	< 0.002
Dimethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002
Disulfoton	0.002	mg/L	< 0.002	< 0.002	< 0.002
EPN	0.002	mg/L	< 0.002	< 0.002	< 0.002
Ethion	0.002	mg/L	< 0.002	< 0.002	< 0.002
Ethoprop	0.002	mg/L	< 0.002	< 0.002	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	< 0.002
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	< 0.002
Fenthion	0.002	mg/L	< 0.002	< 0.002	< 0.002
Malathion	0.002	mg/L	< 0.002	< 0.002	< 0.002
Merphos	0.002	mg/L	< 0.002	< 0.002	< 0.002

Client Sample ID			POND 4-SW4	POND 5-SW5	QC9
Sample Matrix			**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**M17-Ma25979**	**M17-Ma25980**	**M17-Ma25983**
Date Sampled			**Mar 20, 2017**	**Mar 20, 2017**	**Mar 20, 2017**
Test/Reference	LOR	Unit			
Organophosphorus Pesticides					
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002
Mevinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002
Monocrotophos	0.002	mg/L	< 0.002	< 0.002	< 0.002
Naled	0.002	mg/L	< 0.002	< 0.002	< 0.002
Omethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002
Phorate	0.002	mg/L	< 0.002	< 0.002	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02	< 0.02	< 0.02
Pyrazophos	0.002	mg/L	< 0.002	< 0.002	< 0.002
Ronnel	0.002	mg/L	< 0.002	< 0.002	< 0.002
Terbufos	0.002	mg/L	< 0.002	< 0.002	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002
Tokuthion	0.002	mg/L	< 0.002	< 0.002	< 0.002
Trichloronate	0.002	mg/L	< 0.002	< 0.002	< 0.002
Triphenylphosphate (surr.)	1	%	122	70	95
Acid Herbicides					
2.4-D	0.001	mg/L	< 0.02	< 0.001	< 0.001
2.4-DB	0.001	mg/L	< 0.02	< 0.001	< 0.001
2.4.5-T	0.001	mg/L	< 0.02	< 0.001	< 0.001
2.4.5-TP	0.001	mg/L	< 0.02	< 0.001	< 0.001
Actril (loxynil)	0.001	mg/L	< 0.02	< 0.001	< 0.001
Dicamba	0.001	mg/L	< 0.02	< 0.001	< 0.001
Dichlorprop	0.001	mg/L	< 0.02	< 0.001	< 0.001
Dinitro-o-cresol	0.001	mg/L	< 0.02	< 0.001	< 0.001
Dinoseb	0.001	mg/L	< 0.02	< 0.001	< 0.001
MCPA	0.001	mg/L	< 0.02	< 0.001	< 0.001
MCPB	0.001	mg/L	< 0.02	< 0.001	< 0.001
Mecoprop	0.001	mg/L	< 0.02	< 0.001	< 0.001
Warfarin (surr.)	1	%	89	99	93
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
TRH >C10-C16	0.05	mg/L	-	-	< 0.05
TRH >C16-C34	0.1	mg/L	-	-	< 0.1
TRH >C34-C40	0.1	mg/L	-	-	< 0.1
Heavy Metals					
Arsenic	0.001	mg/L	0.005	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	0.084	0.007	< 0.001
Copper	0.001	mg/L	0.034	0.005	< 0.001
Lead	0.001	mg/L	0.018	< 0.001	< 0.001
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	0.059	0.048	< 0.001
Zinc	0.005	mg/L	0.079	0.020	< 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	Mar 27, 2017	7 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Mar 24, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Mar 27, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
BTEX	Melbourne	Mar 24, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Melbourne	Mar 27, 2017	7 Day
- Method: USEPA 8270 Polycyclic Aromatic Hydrocarbons			
Acid Herbicides	Melbourne	Mar 27, 2017	14 Day
- Method: LTM-ORG-2180 Phenoxy Acid Herbicides			
Metals M8	Melbourne	Mar 24, 2017	28 Days
- Method: LTM-MET-3040 Metals in Waters by ICP-MS			
Eurofins | mgt Suite B14			
Organochlorine Pesticides	Melbourne	Mar 27, 2017	7 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Melbourne	Mar 27, 2017	7 Day
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			

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Company Name: Coffey Environments P/L N'castle
Address: Lot 101, 19 Warabrook Boulevard
Warabrook
NSW 2304

Project Name: LOCHINVAR
Project ID: 754-NTLEN202989

Order No.:
Report #: 539344
Phone: 02 4016 2300
Fax: 02 4016 2380

Received: Mar 23, 2017 8:30 AM
Due: Mar 30, 2017
Priority: 5 Day
Contact Name: Damien Hendrickx

Eurofins | mgt Analytical Services Manager : Mary Makarios

Sample Detail						% Clay	HOLD	pH (1:5 Aqueous extract)	Polycyclic Aromatic Hydrocarbons	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite B14	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																
Brisbane Laboratory - NATA Site # 20794						X										
Perth Laboratory - NATA Site # 18217																
External Laboratory																
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
1	SS12	Mar 20, 2017		Soil	M17-Ma25965				X	X	X	X	X	X		X
2	SS13	Mar 20, 2017		Soil	M17-Ma25966				X		X			X		
3	SS14	Mar 20, 2017		Soil	M17-Ma25967				X	X	X	X	X	X		X
4	SS15	Mar 20, 2017		Soil	M17-Ma25968				X		X			X		
5	SS16	Mar 20, 2017		Soil	M17-Ma25969				X	X	X	X	X	X		X
6	SS17	Mar 20, 2017		Soil	M17-Ma25970				X	X	X	X	X	X		X
7	SS18	Mar 20, 2017		Soil	M17-Ma25971				X		X			X		
8	SS19	Mar 20, 2017		Soil	M17-Ma25972				X		X			X		
9	SS20	Mar 20, 2017		Soil	M17-Ma25973	X		X	X	X	X	X	X	X	X	X

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Sample Detail						% Clay	HOLD	pH (1:5 Aqueous extract)	Polycyclic Aromatic Hydrocarbons	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite B14	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																
Brisbane Laboratory - NATA Site # 20794						X										
Perth Laboratory - NATA Site # 18217																
10	SS21	Mar 20, 2017		Soil	M17-Ma25974				X	X	X	X	X	X		X
11	SS22	Mar 20, 2017		Soil	M17-Ma25975					X	X		X	X		
12	SS23	Mar 20, 2017		Soil	M17-Ma25976					X	X		X	X		
13	SP1	Mar 20, 2017		Soil	M17-Ma25977				X	X	X	X	X	X		X
14	SS24	Mar 20, 2017		Soil	M17-Ma25978				X		X	X		X		X
15	POND 4-SW4	Mar 20, 2017		Water	M17-Ma25979					X	X		X			
16	POND 5-SW5	Mar 20, 2017		Water	M17-Ma25980					X	X		X			
17	QC6	Mar 20, 2017		Soil	M17-Ma25981						X			X		
18	QC7	Mar 20, 2017		Soil	M17-Ma25982				X	X	X	X	X	X		X
19	QC9	Mar 20, 2017		Water	M17-Ma25983				X	X	X	X	X			X
20	SS25	Mar 20, 2017		Soil	M17-Ma25984		X									
Test Counts						1	1	1	14	13	19	10	13	16	1	10

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. 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.

****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. 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.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
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 20-130%

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.

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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	
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	
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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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							
Acid Herbicides							
2.4-D	mg/L	< 0.001			0.001	Pass	
2.4-DB	mg/L	< 0.001			0.001	Pass	
2.4.5-T	mg/L	< 0.001			0.001	Pass	
2.4.5-TP	mg/L	< 0.001			0.001	Pass	
Actril (loxynil)	mg/L	< 0.001			0.001	Pass	
Dicamba	mg/L	< 0.001			0.001	Pass	
Dichlorprop	mg/L	< 0.001			0.001	Pass	
Dinitro-o-cresol	mg/L	< 0.001			0.001	Pass	
Dinoseb	mg/L	< 0.001			0.001	Pass	
MCPA	mg/L	< 0.001			0.001	Pass	
MCPB	mg/L	< 0.001			0.001	Pass	
Mecoprop	mg/L	< 0.001			0.001	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
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							
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							
TRH C6-C9	%	85			70-130	Pass	
TRH C10-C14	%	76			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	116			70-130	Pass	
Toluene	%	116			70-130	Pass	
Ethylbenzene	%	116			70-130	Pass	
m&p-Xylenes	%	122			70-130	Pass	
Xylenes - Total	%	120			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	102			70-130	Pass	
TRH C6-C10	%	89			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	115			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Acenaphthylene	%	116			70-130	Pass	
Anthracene	%	126			70-130	Pass	
Benz(a)anthracene	%	116			70-130	Pass	
Benzo(a)pyrene	%	108			70-130	Pass	
Benzo(b&j)fluoranthene	%	110			70-130	Pass	
Benzo(g.h.i)perylene	%	127			70-130	Pass	
Benzo(k)fluoranthene	%	101			70-130	Pass	
Chrysene	%	113			70-130	Pass	
Dibenz(a.h)anthracene	%	122			70-130	Pass	
Fluoranthene	%	99			70-130	Pass	
Fluorene	%	121			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	119			70-130	Pass	
Naphthalene	%	93			70-130	Pass	
Phenanthrene	%	129			70-130	Pass	
Pyrene	%	101			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4.4'-DDD	%	95			70-130	Pass	
4.4'-DDE	%	93			70-130	Pass	
4.4'-DDT	%	115			70-130	Pass	
a-BHC	%	124			70-130	Pass	
Aldrin	%	83			70-130	Pass	
b-BHC	%	112			70-130	Pass	
d-BHC	%	109			70-130	Pass	
Dieldrin	%	118			70-130	Pass	
Endosulfan I	%	121			70-130	Pass	
Endosulfan II	%	108			70-130	Pass	
Endosulfan sulphate	%	104			70-130	Pass	
Endrin	%	109			70-130	Pass	
Endrin aldehyde	%	99			70-130	Pass	
Endrin ketone	%	91			70-130	Pass	
g-BHC (Lindane)	%	119			70-130	Pass	
Heptachlor	%	100			70-130	Pass	
Heptachlor epoxide	%	117			70-130	Pass	
Hexachlorobenzene	%	82			70-130	Pass	
Methoxychlor	%	121			70-130	Pass	
LCS - % Recovery							
Acid Herbicides							
2.4-DB	%	101			70-130	Pass	
2.4.5-T	%	108			70-130	Pass	
2.4.5-TP	%	79			70-130	Pass	
Actril (loxynil)	%	81			70-130	Pass	
Dichlorprop	%	91			70-130	Pass	
Dinoseb	%	85			70-130	Pass	
MCPA	%	89			70-130	Pass	
MCPB	%	102			70-130	Pass	
Mecoprop	%	84			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	90			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	105			80-120	Pass	
Cadmium	%	99			80-120	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chromium			%	99			80-120	Pass	
Copper			%	97			80-120	Pass	
Lead			%	98			80-120	Pass	
Mercury			%	103			75-125	Pass	
Nickel			%	96			80-120	Pass	
Zinc			%	100			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	M17-Ma24135	NCP	%	90			70-130	Pass	
4.4'-DDE	M17-Ma24135	NCP	%	114			70-130	Pass	
4.4'-DDT	M17-Ma24135	NCP	%	111			70-130	Pass	
a-BHC	M17-Ma24135	NCP	%	96			70-130	Pass	
Aldrin	M17-Ma24135	NCP	%	90			70-130	Pass	
b-BHC	M17-Ma24135	NCP	%	84			70-130	Pass	
d-BHC	M17-Ma24135	NCP	%	85			70-130	Pass	
Dieldrin	M17-Ma24135	NCP	%	105			70-130	Pass	
Endosulfan I	M17-Ma24135	NCP	%	87			70-130	Pass	
Endosulfan II	M17-Ma24135	NCP	%	80			70-130	Pass	
Endosulfan sulphate	M17-Ma24135	NCP	%	76			70-130	Pass	
Endrin	M17-Ma24135	NCP	%	97			70-130	Pass	
Endrin aldehyde	M17-Ma24135	NCP	%	80			70-130	Pass	
Endrin ketone	M17-Ma21976	NCP	%	72			70-130	Pass	
g-BHC (Lindane)	M17-Ma24135	NCP	%	98			70-130	Pass	
Heptachlor	M17-Ma24135	NCP	%	94			70-130	Pass	
Heptachlor epoxide	M17-Ma24135	NCP	%	87			70-130	Pass	
Hexachlorobenzene	M17-Ma24135	NCP	%	84			70-130	Pass	
Methoxychlor	M17-Ma24135	NCP	%	121			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M17-Ma25980	CP	%	104			75-125	Pass	
Cadmium	M17-Ma25980	CP	%	96			75-125	Pass	
Chromium	M17-Ma25980	CP	%	96			75-125	Pass	
Copper	M17-Ma25980	CP	%	94			75-125	Pass	
Lead	M17-Ma25980	CP	%	97			75-125	Pass	
Mercury	M17-Ma25980	CP	%	90			70-130	Pass	
Nickel	M17-Ma25980	CP	%	88			75-125	Pass	
Zinc	M17-Ma25980	CP	%	94			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M17-Ma26638	NCP	%	92			70-130	Pass	
TRH C10-C14	M17-Ma27536	NCP	%	71			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M17-Ma26638	NCP	%	109			70-130	Pass	
Toluene	M17-Ma26638	NCP	%	106			70-130	Pass	
Ethylbenzene	M17-Ma26638	NCP	%	104			70-130	Pass	
m&p-Xylenes	M17-Ma26638	NCP	%	109			70-130	Pass	
o-Xylene	M17-Ma26638	NCP	%	105			70-130	Pass	
Xylenes - Total	M17-Ma26638	NCP	%	108			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M17-Ma26638	NCP	%	91			70-130	Pass	
TRH C6-C10	M17-Ma26638	NCP	%	91			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M17-Ma25693	NCP	%	110			70-130	Pass	
Acenaphthylene	M17-Ma25693	NCP	%	111			70-130	Pass	
Anthracene	M17-Ma25693	NCP	%	111			70-130	Pass	
Benz(a)anthracene	M17-Ma25693	NCP	%	118			70-130	Pass	
Benzo(a)pyrene	M17-Ma25693	NCP	%	78			70-130	Pass	
Benzo(b&j)fluoranthene	M17-Ma25693	NCP	%	75			70-130	Pass	
Benzo(g.h.i)perylene	M17-Ma25693	NCP	%	123			70-130	Pass	
Benzo(k)fluoranthene	M17-Ma25693	NCP	%	71			70-130	Pass	
Chrysene	M17-Ma25693	NCP	%	116			70-130	Pass	
Dibenz(a.h)anthracene	M17-Ma25693	NCP	%	113			70-130	Pass	
Fluoranthene	M17-Ma25693	NCP	%	103			70-130	Pass	
Fluorene	M17-Ma25693	NCP	%	114			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M17-Ma25693	NCP	%	106			70-130	Pass	
Naphthalene	M17-Ma25693	NCP	%	108			70-130	Pass	
Phenanthrene	M17-Ma25693	NCP	%	115			70-130	Pass	
Pyrene	M17-Ma25693	NCP	%	106			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	M17-Ma27536	NCP	%	73			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M17-Ma26666	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4.4'-DDD	M17-Ma26666	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
4.4'-DDE	M17-Ma26666	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
4.4'-DDT	M17-Ma26666	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
a-BHC	M17-Ma26666	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Aldrin	M17-Ma26666	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
b-BHC	M17-Ma26666	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
d-BHC	M17-Ma26666	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Dieldrin	M17-Ma26666	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan I	M17-Ma26666	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan II	M17-Ma26666	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan sulphate	M17-Ma26666	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin	M17-Ma26666	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin aldehyde	M17-Ma26666	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin ketone	M17-Ma26666	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
g-BHC (Lindane)	M17-Ma26666	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Heptachlor	M17-Ma26666	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Heptachlor epoxide	M17-Ma26666	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Hexachlorobenzene	M17-Ma26666	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Methoxychlor	M17-Ma26666	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Toxaphene	M17-Ma26666	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M17-Ma25980	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	M17-Ma25980	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	M17-Ma25980	CP	mg/L	0.007	0.006	16	30%	Pass	
Copper	M17-Ma25980	CP	mg/L	0.005	0.005	5.0	30%	Pass	
Lead	M17-Ma25980	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	M17-Ma25980	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	M17-Ma25980	CP	mg/L	0.048	0.046	4.0	30%	Pass	
Zinc	M17-Ma25980	CP	mg/L	0.020	0.019	9.0	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M17-Ma26637	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	M17-Ma27760	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M17-Ma27760	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M17-Ma27760	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M17-Ma26637	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	M17-Ma26637	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	M17-Ma26637	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	M17-Ma26637	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	M17-Ma26637	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	M17-Ma26637	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M17-Ma26637	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	M17-Ma26637	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M17-Ma28001	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	M17-Ma28001	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	M17-Ma28001	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	M17-Ma28001	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	M17-Ma28001	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	M17-Ma28001	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	M17-Ma28001	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	M17-Ma28001	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	M17-Ma28001	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	M17-Ma28001	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	M17-Ma28001	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	M17-Ma28001	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M17-Ma28001	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	M17-Ma28001	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	M17-Ma28001	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	M17-Ma28001	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	M17-Ma27760	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	M17-Ma27760	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	M17-Ma27760	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

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

Mary Makarios	Analytical Services Manager
Alex Petridis	Senior Analyst-Metal (VIC)
Alex Petridis	Senior Analyst-Organic (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)

Glenn Jackson

National Operations 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.

CERTIFICATE OF ANALYSIS

Work Order	: **EM1500386**	Page	: 1 of 6
Client	: **COFFEY ENVIRONMENTS PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: MS LIBBY BETZ	Contact	: Bronwyn Sheen
Address	: 19 WARABRROK BOULEVARD WARABROOK NSW, AUSTRALIA 2304	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: libby.betz@coffey.com	E-mail	: bronwyn.sheen@alsglobal.com
Telephone	: +61 02 4016 2300	Telephone	: +61-3-8549 9636
Facsimile	: +61 02 4016 2380	Facsimile	: +61-3-8549 9601
Project	: ENAUWARA04581AA Winders Lane	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: 3459	Date Samples Received	: 16-JAN-2015
Sampler	: JK	Issue Date	: 22-JAN-2015
Site	: ----		
		No. of samples received	: 1
Quote number	: EN/077/14	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Herman Lin	Laboratory Manager	Melbourne Inorganics
Nancy Wang	Senior Semivolatile Instrument Chemist	Melbourne Organics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC 3	----	----	----	----
				Client sampling date / time	14-JAN-2015 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM1500386-001	----	----	----	----
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		**30.7**	----	----	----	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	----	----	----	----
Cadmium	7440-43-9	1	mg/kg		<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg		**96**	----	----	----	----
Copper	7440-50-8	5	mg/kg		**34**	----	----	----	----
Lead	7439-92-1	5	mg/kg		**6**	----	----	----	----
Nickel	7440-02-0	2	mg/kg		**70**	----	----	----	----
Zinc	7440-66-6	5	mg/kg		**53**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	mg/kg		<0.5	----	----	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	mg/kg		<0.5	----	----	----	----
^ **Benzo(a)pyrene TEQ (half LOR)**	----	0.5	mg/kg		**0.6**	----	----	----	----
^ **Benzo(a)pyrene TEQ (LOR)**	----	0.5	mg/kg		**1.2**	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC 3	----	----	----	----
				Client sampling date / time	14-JAN-2015 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM1500386-001	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	----	----	----
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg	<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of BTEX	----	0.2	mg/kg	<0.2	----	----	----	----
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	----	----	----	----
Naphthalene	91-20-3	1	mg/kg	<1	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.1	%	**98.6**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	**100**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%	**80.4**	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%	**98.3**	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%	**119**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	**110**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**99.8**	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	QC 3	----	----	----	----
			Client sampling date / time	14-JAN-2015 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM1500386-001	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates - Continued								
Toluene-D8	2037-26-5	0.1	%	**86.6**	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	**92.5**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	Recovery Limits (%) High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	54	125
2-Chlorophenol-D4	93951-73-6	65	123
2.4.6-Tribromophenol	118-79-6	34	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	61	125
Anthracene-d10	1719-06-8	62	130
4-Terphenyl-d14	1718-51-0	67	133
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	51	125
Toluene-D8	2037-26-5	55	125
4-Bromofluorobenzene	460-00-4	56	124

QUALITY CONTROL REPORT

Work Order	: **EM1500386**	Page	: 1 of 8
Client	: **COFFEY ENVIRONMENTS PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: MS LIBBY BETZ	Contact	: Bronwyn Sheen
Address	: 19 WARABRROK BOULEVARD WARABROOK NSW, AUSTRALIA 2304	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: libby.betz@coffey.com	E-mail	: bronwyn.sheen@alsglobal.com
Telephone	: +61 02 4016 2300	Telephone	: +61-3-8549 9636
Facsimile	: +61 02 4016 2380	Facsimile	: +61-3-8549 9601
Project	: ENAUWARA04581AA Winders Lane	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: 3459	Date Samples Received	: 16-JAN-2015
Sampler	: JK	Issue Date	: 22-JAN-2015
Order number	: ----		
		No. of samples received	: 1
Quote number	: EN/077/14	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out ir compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Herman Lin	Laboratory Manager	Melbourne Inorganics
Nancy Wang	Senior Semivolatile Instrument Chemist	Melbourne Organics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA055: Moisture Content (QC Lot: 3790337)									
EM1500281-051	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	12.9	12.4	4.4	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 3791683)									
EM1500375-006	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	20	14	34.5	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	11	8	28.6	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	13	8	41.8	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3791684)									
EM1500375-006	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3791690)									
EM1500368-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3790518)									
EM1500281-017	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EM1500411-018	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3791688)									
EM1500362-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3791688) - continued									
EM1500362-001	Anonymous	EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
		EP071: C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3790518)									
EM1500281-017	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EM1500411-018	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3791688)									
EM1500362-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
		EP071: >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	0.0	No Limit
EP080: BTEXN (QC Lot: 3790518)									
EM1500281-017	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EM1500411-018	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 3791683)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	97.0	79	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	102	87	115
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	100	89	113
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	99.3	90	116
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	94.9	85	107
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	101	89	111
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	101	89	111
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3791684)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	95.8	85	103
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3791690)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	3 mg/kg	106	65	119
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	3 mg/kg	106	61	125
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	3 mg/kg	92.6	68	114
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	3 mg/kg	91.1	62	120
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	3 mg/kg	95.1	69	113
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	3 mg/kg	104	68	116
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	3 mg/kg	108	67	115
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	3 mg/kg	106	66	116
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	3 mg/kg	85.2	62	116
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	3 mg/kg	111	63	119
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	3 mg/kg	70.9	64	114
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	3 mg/kg	113	67	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	3 mg/kg	87.9	64	114
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	3 mg/kg	83.5	62	116
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	3 mg/kg	81.2	62	114
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	3 mg/kg	79.3	59	117
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3790518)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	36 mg/kg	79.2	66	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3791688)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	626 mg/kg	112	65	131
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	3144 mg/kg	106	70	126
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	1604 mg/kg	93.9	70	122
EP071: C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3790518)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	45 mg/kg	86.7	64	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3791688)								
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	1018 mg/kg	105	68	130
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	4616 mg/kg	94.8	72	116
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	116 mg/kg	90.5	38	132
EP071: >C10 - C40 Fraction (sum)	----	100	mg/kg	<100	----	----	----	----
EP080: BTEXN (QCLot: 3790518)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	2 mg/kg	89.3	74	124
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	2 mg/kg	89.4	75	129
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2 mg/kg	89.0	72	124
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	4 mg/kg	90.9	72	132
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2 mg/kg	93.4	76	130
EP080: Naphthalene	91-20-3	1	mg/kg	<1	0.5 mg/kg	92.0	66	132

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005T: Total Metals by ICP-AES (QCLot: 3791683)							
EM1500375-008	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	99.5	78	124
		EG005T: Cadmium	7440-43-9	50 mg/kg	99.4	84	116
		EG005T: Chromium	7440-47-3	50 mg/kg	102	79	121
		EG005T: Copper	7440-50-8	50 mg/kg	102	82	124
		EG005T: Lead	7439-92-1	50 mg/kg	105	76	124
		EG005T: Nickel	7440-02-0	50 mg/kg	98.1	78	120
		EG005T: Zinc	7440-66-6	50 mg/kg	99.6	74	128
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3791684)							
EM1500375-008	Anonymous	EG035T: Mercury	7439-97-6	5.0 mg/kg	89.3	76	116
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3791690)							
EM1500375-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	1.5 mg/kg	98.0	67	117
		EP075(SIM): Pyrene	129-00-0	1.5 mg/kg	107	52	148
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3790518)							
EM1500281-020	Anonymous	EP080: C6 - C9 Fraction	----	28 mg/kg	65.8	42	131

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3791688)							
EM1500368-001	Anonymous	EP071: C10 - C14 Fraction	----	626 mg/kg	117	64	132
		EP071: C15 - C28 Fraction	----	3144 mg/kg	113	68	128
		EP071: C29 - C36 Fraction	----	1604 mg/kg	103	69	123
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3790518)							
EM1500281-020	Anonymous	EP080: C6 - C10 Fraction	C6_C10	33 mg/kg	71.5	39	129
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3791688)							
EM1500368-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	1018 mg/kg	113	65	131
		EP071: >C16 - C34 Fraction	----	4616 mg/kg	101	69	119
		EP071: >C34 - C40 Fraction	----	116 mg/kg	118	45	137
EP080: BTEXN (QCLot: 3790518)							
EM1500281-020	Anonymous	EP080: Benzene	71-43-2	2 mg/kg	74.7	50	136
		EP080: Toluene	108-88-3	2 mg/kg	73.9	56	139

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

The quality control term Matrix Spike (MS) and Matrix Spike Duplicate (MSD) refers to intralaboratory split samples spiked with a representative set of target analytes. The purpose of these QC parameters are to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report: Spike Concentration	Spike Recovery (%): MS	Spike Recovery (%): MSD	Recovery Limits (%): Low	Recovery Limits (%): High	RPDs (%): Value	RPDs (%): Control Limit
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3790518)										
EM1500281-020	Anonymous	EP080: C6 - C9 Fraction	----	28 mg/kg	65.8	----	42	131	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3790518)										
EM1500281-020	Anonymous	EP080: C6 - C10 Fraction	C6_C10	33 mg/kg	71.5	----	39	129	----	----
EP080: BTEXN (QCLot: 3790518)										
EM1500281-020	Anonymous	EP080: Benzene	71-43-2	2 mg/kg	74.7	----	50	136	----	----
		EP080: Toluene	108-88-3	2 mg/kg	73.9	----	56	139	----	----
EG005T: Total Metals by ICP-AES (QCLot: 3791683)										
EM1500375-008	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	99.5	----	78	124	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	99.4	----	84	116	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	102	----	79	121	----	----
		EG005T: Copper	7440-50-8	50 mg/kg	102	----	82	124	----	----
		EG005T: Lead	7439-92-1	50 mg/kg	105	----	76	124	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	98.1	----	78	120	----	----
		EG005T: Zinc	7440-66-6	50 mg/kg	99.6	----	74	128	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3791684)										
EM1500375-008	Anonymous	EG035T: Mercury	7439-97-6	5.0 mg/kg	89.3	----	76	116	----	----

Sub-Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3791688)										
EM1500368-001	Anonymous	EP071: C10 - C14 Fraction	----	626 mg/kg	117	----	64	132	----	----
		EP071: C15 - C28 Fraction	----	3144 mg/kg	113	----	68	128	----	----
		EP071: C29 - C36 Fraction	----	1604 mg/kg	103	----	69	123	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3791688)										
EM1500368-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	1018 mg/kg	113	----	65	131	----	----
		EP071: >C16 - C34 Fraction	----	4616 mg/kg	101	----	69	119	----	----
		EP071: >C34 - C40 Fraction	----	116 mg/kg	118	----	45	137	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3791690)										
EM1500375-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	1.5 mg/kg	98.0	----	67	117	----	----
		EP075(SIM): Pyrene	129-00-0	1.5 mg/kg	107	----	52	148	----	----

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **EM1500386**	Page	: 1 of 5
Client	: COFFEY ENVIRONMENTS PTY LTD	Laboratory	: Environmental Division Melbourne
Contact	: MS LIBBY BETZ	Contact	: Bronwyn Sheen
Address	: 19 WARABRROK BOULEVARD WARABROOK NSW, AUSTRALIA 2304	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: libby.betz@coffey.com	E-mail	: bronwyn.sheen@alsglobal.com
Telephone	: +61 02 4016 2300	Telephone	: +61-3-8549 9636
Facsimile	: +61 02 4016 2380	Facsimile	: +61-3-8549 9601
Project	: ENAUWARA04581AA Winders Lane	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: 3459	Date Samples Received	: 16-JAN-2015
Sampler	: JK	Issue Date	: 22-JAN-2015
Order number	: ----		
		No. of samples received	: 1
Quote number	: EN/077/14	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content							
Soil Glass Jar - Unpreserved (EA055-103)							
QC 3	**14-JAN-2015**	**----**	----	----	**19-JAN-2015**	28-JAN-2015	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
QC 3	**14-JAN-2015**	**20-JAN-2015**	13-JUL-2015	✓	**20-JAN-2015**	13-JUL-2015	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
QC 3	**14-JAN-2015**	**20-JAN-2015**	11-FEB-2015	✓	**21-JAN-2015**	11-FEB-2015	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP071)							
QC 3	**14-JAN-2015**	**20-JAN-2015**	28-JAN-2015	✓	**20-JAN-2015**	01-MAR-2015	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
QC 3	**14-JAN-2015**	**20-JAN-2015**	28-JAN-2015	✓	**21-JAN-2015**	01-MAR-2015	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
QC 3	**14-JAN-2015**	**19-JAN-2015**	28-JAN-2015	✓	**20-JAN-2015**	28-JAN-2015	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
QC 3	**14-JAN-2015**	**19-JAN-2015**	28-JAN-2015	✓	**20-JAN-2015**	28-JAN-2015	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	1	4	**25.0**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	8	**12.5**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	7	**14.3**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	7	**14.3**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH - Semivolatile Fraction	EP071	1	9	**11.1**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	2	11	**18.2**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	8	**12.5**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	7	**14.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	7	**14.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH - Semivolatile Fraction	EP071	1	9	**11.1**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	1	11	**9.1**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	8	**12.5**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	7	**14.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	7	**14.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH - Semivolatile Fraction	EP071	1	9	**11.1**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	1	11	**9.1**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	8	**12.5**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	7	**14.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	7	**14.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH - Semivolatile Fraction	EP071	1	9	**11.1**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	1	11	**9.1**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	In-house. A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 21st ed., 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	SOIL	(USEPA SW 846 - 8015A) Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40.
PAH/Phenols (SIM)	EP075(SIM)	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	(USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve.

Preparation Methods	Method	Matrix	Method Descriptions
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW 846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

- **For all matrices, no Method Blank value outliers occur.**
- **For all matrices, no Duplicate outliers occur.**
- **For all matrices, no Laboratory Control outliers occur.**
- **For all matrices, no Matrix Spike outliers occur.**

Regular Sample Surrogates

- **For all regular sample matrices, no surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

- **No Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- **No Quality Control Sample Frequency Outliers exist.**

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM1703497**	Page	: 1 of 7
Client	: **COFFEY ENVIRONMENTS PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: MR DAMIEN HENDRICKX	Contact	: Bronwyn Sheen
Address	: 19 WARABRROK BOULEVARD WARABROOK NSW, AUSTRALIA 2304	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 02 4016 2300	Telephone	: +61-3-8549 9636
Project	: 754-NTLEN202989	Date Samples Received	: 23-Mar-2017 17:50
Order number	: ----	Date Analysis Commenced	: 24-Mar-2017
C-O-C number	: 4573	Issue Date	: 30-Mar-2017 15:44
Sampler	: SEAN BLACKFORD		
Site	: Lochinvar		
Quote number	: EN/077/17		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Chris Lemaitre	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Lana Nguyen	Senior LCMS Chemist	Sydney Organics, Smithfield, NSW
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	QC8	----	----	----	----
			Client sampling date / time	20-Mar-2017 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM1703497-001	--------	--------	--------	--------
				Result	----	----	----	----
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1	%	**20.1**	----	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	**72**	----	----	----	----
Copper	7440-50-8	5	mg/kg	**29**	----	----	----	----
Lead	7439-92-1	5	mg/kg	**11**	----	----	----	----
Nickel	7440-02-0	2	mg/kg	**43**	----	----	----	----
Zinc	7440-66-6	5	mg/kg	**286**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	----	----
^ **Total Chlordane (sum)**	----	0.05	mg/kg	<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg	**0.16**	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	----	----	----
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg	<0.05	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC8	----	----	----	----
				Client sampling date / time	20-Mar-2017 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM1703497-001	--------	--------	--------	--------
					Result	----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	----	----	----	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		**0.16**	----	----	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC8	----	----	----	----
				Client sampling date / time	20-Mar-2017 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM1703497-001	--------	--------	--------	--------
					Result	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	----	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	----	----	----
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC8	----	----	----	----
				Client sampling date / time	20-Mar-2017 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM1703497-001	--------	--------	--------	--------
					Result	----	----	----	----
EP080: BTEXN - Continued									
Naphthalene	91-20-3	1	mg/kg		<1	----	----	----	----
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg		<0.02	----	----	----	----
2.4-DB	94-82-6	0.02	mg/kg		<0.02	----	----	----	----
Dicamba	1918-00-9	0.02	mg/kg		<0.02	----	----	----	----
Mecoprop	93-65-2	0.02	mg/kg		<0.02	----	----	----	----
MCPA	94-74-6	0.02	mg/kg		<0.02	----	----	----	----
2.4-DP	120-36-5	0.02	mg/kg		<0.02	----	----	----	----
2.4-D	94-75-7	0.02	mg/kg		<0.02	----	----	----	----
Triclopyr	55335-06-3	0.02	mg/kg		<0.02	----	----	----	----
2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg		<0.02	----	----	----	----
2.4.5-T	93-76-5	0.02	mg/kg		<0.02	----	----	----	----
MCPB	94-81-5	0.02	mg/kg		<0.02	----	----	----	----
Picloram	1918-02-1	0.02	mg/kg		<0.02	----	----	----	----
Clopyralid	1702-17-6	0.02	mg/kg		<0.02	----	----	----	----
Fluroxypyr	69377-81-7	0.02	mg/kg		<0.02	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		77.1	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		71.1	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		88.7	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		78.7	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		92.5	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		98.2	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		104	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		102	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		82.0	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		93.6	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		108	----	----	----	----
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2.4-Dichlorophenyl Acetic Acid	19719-28-9	0.02	%		88.0	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	38	128
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	33	139
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	54	125
2-Chlorophenol-D4	93951-73-6	65	123
2.4.6-Tribromophenol	118-79-6	34	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	61	125
Anthracene-d10	1719-06-8	62	130
4-Terphenyl-d14	1718-51-0	67	133
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	51	125
Toluene-D8	2037-26-5	55	125
4-Bromofluorobenzene	460-00-4	56	124
EP202S: Phenoxyacetic Acid Herbicide Surrogate			
2.4-Dichlorophenyl Acetic Acid	19719-28-9	45	139

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EM1703497**	Page	: 1 of 12
Client	: **COFFEY ENVIRONMENTS PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: MR DAMIEN HENDRICKX	Contact	: Bronwyn Sheen
Address	: 19 WARABRROK BOULEVARD WARABROOK NSW, AUSTRALIA 2304	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 02 4016 2300	Telephone	: +61-3-8549 9636
Project	: 754-NTLEN202989	Date Samples Received	: 23-Mar-2017
Order number	: ----	Date Analysis Commenced	: 24-Mar-2017
C-O-C number	: 4573	Issue Date	: 30-Mar-2017
Sampler	: SEAN BLACKFORD		
Site	: Lochinvar		
Quote number	: EN/077/17		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Chris Lemaitre	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Lana Nguyen	Senior LCMS Chemist	Sydney Organics, Smithfield, NSW
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA055: Moisture Content (QC Lot: 807431)									
EM1703499-001	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	19.6	19.8	1.10	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 812290)									
EM1703561-004	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	71	69	2.70	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	28	27	4.56	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	13	13	0.00	No Limit
EM1703497-001	QC8	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	72	61	17.0	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	43	40	9.30	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	29	26	8.99	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	11	13	16.6	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	286	306	6.88	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 812289)									
EM1703700-004	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EM1703497-001	QC8	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 812551)									
EM1703527-005	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 812551) - continued									
EM1703527-005	Anonymous	EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EM1703458-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 812551)									
EM1703527-005	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 812551) - continued									
EM1703527-005	Anonymous	EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EM1703458-001	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 812549)									
EM1703458-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 812549) - continued									
EM1703458-001	Anonymous	EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 807171)									
EM1703467-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EM1703469-046	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 812550)									
EM1703615-018	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
		EP071: C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	0.00	No Limit
EM1703458-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
		EP071: C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 807171)									
EM1703467-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EM1703469-046	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 812550)									
EM1703615-018	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
		EP071: >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	0.00	No Limit
EM1703458-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
		EP071: >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	0.00	No Limit
EP080: BTEXN (QC Lot: 807171)									
EM1703467-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080: BTEXN (QC Lot: 807171) - continued									
EM1703467-001	Anonymous	EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EM1703469-046	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QC Lot: 810761)									
EM1703276-001	Anonymous	EP202: 4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: 2.4-DB	94-82-6	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: Dicamba	1918-00-9	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: Mecoprop	93-65-2	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: MCPA	94-74-6	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: 2.4-DP	120-36-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: 2.4-D	94-75-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: Triclopyr	55335-06-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: 2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: 2.4.5-T	93-76-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: MCPB	94-81-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: Picloram	1918-02-1	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: Clopyralid	1702-17-6	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: Fluroxypyr	69377-81-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
EP1702789-007	Anonymous	EP202: 4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: 2.4-DB	94-82-6	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: Dicamba	1918-00-9	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: Mecoprop	93-65-2	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: MCPA	94-74-6	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: 2.4-DP	120-36-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: 2.4-D	94-75-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: Triclopyr	55335-06-3	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: 2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: 2.4.5-T	93-76-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: MCPB	94-81-5	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: Picloram	1918-02-1	0.02	mg/kg	<0.02	<0.02	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QC Lot: 810761) - continued									
EP1702789-007	Anonymous	EP202: Clopyralid	1702-17-6	0.02	mg/kg	<0.02	<0.02	0.00	No Limit
		EP202: Fluroxypyr	69377-81-7	0.02	mg/kg	<0.02	<0.02	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 812290)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	89.7	79	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	88.8	85	109
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	92.1	89	113
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	89.7	84	116
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	96.4	85	107
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	95.6	89	111
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	102	89	111
EG035T: Total Recoverable Mercury by FIMS (QCLot: 812289)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	91.3	85	103
EP068A: Organochlorine Pesticides (OC) (QCLot: 812551)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	94.3	45	131
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	96.4	45	125
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	96.8	46	134
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	95.2	49	133
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	76.5	52	128
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	89.4	48	128
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	80.0	52	128
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	93.6	52	130
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	113	51	131
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	102	57	135
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.7	51	131
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	90.6	51	131
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	99.9	51	131
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	131	41	131
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.0	52	132
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	106	50	134
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	112	49	130
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	93.6	50	132
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	99.9	38	140
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	88.8	64	132
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	100	41	141
EP068B: Organophosphorus Pesticides (OP) (QCLot: 812551)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	97.8	54	135
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	112	51	143

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 812551) - continued								
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	126	10	136
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	111	43	128
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	103	53	131
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	97.9	53	131
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	98.4	51	133
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	102	51	130
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	97.7	54	130
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	94.5	51	135
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	97.9	49	133
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	101	50	134
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	95.9	53	131
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	108	46	134
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	101	51	133
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	98.6	51	133
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	100	51	133
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	82.6	14	124
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 812549)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	3 mg/kg	107	80	121
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	3 mg/kg	105	70	130
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	3 mg/kg	106	80	120
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	3 mg/kg	116	70	124
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	3 mg/kg	101	80	122
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	3 mg/kg	102	80	126
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	3 mg/kg	103	70	128
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	3 mg/kg	107	80	125
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	3 mg/kg	104	70	130
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	3 mg/kg	104	80	126
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	3 mg/kg	101	70	124
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	3 mg/kg	112	75	125
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	3 mg/kg	106	65	125
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	3 mg/kg	120	65	128
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	3 mg/kg	120	65	126
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	3 mg/kg	126	65	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 807171)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	36 mg/kg	107	70	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 812550)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	734 mg/kg	102	65	131

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 812550) - continued								
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	3091 mg/kg	104	70	126
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	1507 mg/kg	101	70	122
EP071: C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 807171)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	45 mg/kg	103	68	125
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 812550)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	1101 mg/kg	100	68	130
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	3914 mg/kg	103	72	116
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	283 mg/kg	110	38	132
EP071: >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080: BTEXN (QCLot: 807171)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	2 mg/kg	91.3	74	124
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	2 mg/kg	97.4	77	125
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2 mg/kg	100	73	125
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	4 mg/kg	98.6	77	128
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2 mg/kg	107	81	128
EP080: Naphthalene	91-20-3	1	mg/kg	<1	0.5 mg/kg	91.8	66	130
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QCLot: 810761)								
EP202: 4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg	<0.02	0.1 mg/kg	72.2	54	128
EP202: 2.4-DB	94-82-6	0.02	mg/kg	<0.02	0.1 mg/kg	87.1	46	130
EP202: Dicamba	1918-00-9	0.02	mg/kg	<0.02	0.1 mg/kg	95.1	52	135
EP202: Mecoprop	93-65-2	0.02	mg/kg	<0.02	0.1 mg/kg	89.8	60	130
EP202: MCPA	94-74-6	0.02	mg/kg	<0.02	0.1 mg/kg	92.9	57	131
EP202: 2.4-DP	120-36-5	0.02	mg/kg	<0.02	0.1 mg/kg	83.8	50	141
EP202: 2.4-D	94-75-7	0.02	mg/kg	<0.02	0.1 mg/kg	96.9	69	131
EP202: Triclopyr	55335-06-3	0.02	mg/kg	<0.02	0.1 mg/kg	109	51	141
EP202: 2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	<0.02	0.1 mg/kg	84.1	41	126
EP202: 2.4.5-T	93-76-5	0.02	mg/kg	<0.02	0.1 mg/kg	111	57	139
EP202: MCPB	94-81-5	0.02	mg/kg	<0.02	0.1 mg/kg	81.8	39	137
EP202: Picloram	1918-02-1	0.02	mg/kg	<0.02	0.1 mg/kg	91.6	49	129
EP202: Clopyralid	1702-17-6	0.02	mg/kg	<0.02	0.1 mg/kg	65.6	49	106
EP202: Fluroxypyr	69377-81-7	0.02	mg/kg	<0.02	0.1 mg/kg	86.3	53	128

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 812290)							
EM1703499-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	87.1	78	124
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.2	84	116
		EG005T: Chromium	7440-47-3	50 mg/kg	108	79	121
		EG005T: Copper	7440-50-8	50 mg/kg	102	82	124
		EG005T: Lead	7439-92-1	50 mg/kg	117	76	124
		EG005T: Nickel	7440-02-0	50 mg/kg	110	78	120
		EG005T: Zinc	7440-66-6	50 mg/kg	119	74	128
EG035T: Total Recoverable Mercury by FIMS (QCLot: 812289)							
EM1703499-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	97.2	76	116
EP068A: Organochlorine Pesticides (OC) (QCLot: 812551)							
EM1703514-001	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	80.8	22	139
		EP068: Heptachlor	76-44-8	0.5 mg/kg	75.4	18	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	85.5	23	136
		EP068: Dieldrin	60-57-1	0.5 mg/kg	81.1	42	136
		EP068: Endrin	72-20-8	0.5 mg/kg	110	23	146
		EP068: 4.4`-DDT	50-29-3	0.5 mg/kg	54.6	20	133
EP068B: Organophosphorus Pesticides (OP) (QCLot: 812551)							
EM1703514-001	Anonymous	EP068: Diazinon	333-41-5	0.5 mg/kg	103	49	135
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	91.0	41	127
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	96.7	47	133
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	92.7	45	133
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	87.1	40	128
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 812549)							
EM1703497-001	QC8	EP075(SIM): Acenaphthene	83-32-9	3 mg/kg	93.8	67	117
		EP075(SIM): Pyrene	129-00-0	3 mg/kg	93.8	52	148
EP080/071: Total Petroleum Hydrocarbons (QCLot: 807171)							
EM1703467-002	Anonymous	EP080: C6 - C9 Fraction	----	28 mg/kg	82.7	42	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 812550)							
EM1703459-035	Anonymous	EP071: C10 - C14 Fraction	----	734 mg/kg	109	53	123
		EP071: C15 - C28 Fraction	----	3091 mg/kg	109	70	124
		EP071: C29 - C36 Fraction	----	1507 mg/kg	105	64	118
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 807171)							
EM1703467-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	33 mg/kg	79.4	39	129
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 812550)							
EM1703459-035	Anonymous	EP071: >C10 - C16 Fraction	----	1101 mg/kg	106	65	123
		EP071: >C16 - C34 Fraction	----	3914 mg/kg	107	67	121

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 812550) - continued							
EM1703459-035	Anonymous	EP071: >C34 - C40 Fraction	----	283 mg/kg	110	44	126
EP080: BTEXN (QCLot: 807171)							
EM1703467-002	Anonymous	EP080: Benzene	71-43-2	2 mg/kg	90.6	50	136
		EP080: Toluene	108-88-3	2 mg/kg	110	56	139
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QCLot: 810761)							
EM1703276-001	Anonymous	EP202: Mecoprop	93-65-2	0.1 mg/kg	77.8	60	140
		EP202: MCPA	94-74-6	0.1 mg/kg	94.9	57	143
		EP202: 2.4-D	94-75-7	0.1 mg/kg	83.5	68	139
		EP202: Triclopyr	55335-06-3	0.1 mg/kg	107	51	145
		EP202: 2.4.5-T	93-76-5	0.1 mg/kg	107	57	142
		EP202: Picloram	1918-02-1	0.1 mg/kg	84.8	49	138
		EP202: Clopyralid	1702-17-6	0.1 mg/kg	71.0	49	149

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM1703497**	Page	: 1 of 6
Client	: **COFFEY ENVIRONMENTS PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: MR DAMIEN HENDRICKX	Telephone	: +61-3-8549 9636
Project	: 754-NTLEN202989	Date Samples Received	: 23-Mar-2017
Site	: Lochinvar	Issue Date	: 30-Mar-2017
Sampler	: SEAN BLACKFORD	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content							
Soil Glass Jar - Unpreserved (EA055-103)							
QC8	**20-Mar-2017**	**----**	----	----	**24-Mar-2017**	03-Apr-2017	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
QC8	**20-Mar-2017**	**28-Mar-2017**	16-Sep-2017	✓	**29-Mar-2017**	16-Sep-2017	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
QC8	**20-Mar-2017**	**28-Mar-2017**	17-Apr-2017	✓	**29-Mar-2017**	17-Apr-2017	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068)							
QC8	**20-Mar-2017**	**28-Mar-2017**	03-Apr-2017	✓	**29-Mar-2017**	07-May-2017	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068)							
QC8	**20-Mar-2017**	**28-Mar-2017**	03-Apr-2017	✓	**29-Mar-2017**	07-May-2017	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
QC8	**20-Mar-2017**	**28-Mar-2017**	03-Apr-2017	✓	**29-Mar-2017**	07-May-2017	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
QC8	**20-Mar-2017**	**24-Mar-2017**	03-Apr-2017	✓	**24-Mar-2017**	03-Apr-2017	✓
Soil Glass Jar - Unpreserved (EP071)							
QC8	**20-Mar-2017**	**28-Mar-2017**	03-Apr-2017	✓	**29-Mar-2017**	07-May-2017	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
QC8	**20-Mar-2017**	**24-Mar-2017**	03-Apr-2017	✓	**24-Mar-2017**	03-Apr-2017	✓
Soil Glass Jar - Unpreserved (EP071)							
QC8	**20-Mar-2017**	**28-Mar-2017**	03-Apr-2017	✓	**29-Mar-2017**	07-May-2017	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
QC8	**20-Mar-2017**	**24-Mar-2017**	03-Apr-2017	✓	**24-Mar-2017**	03-Apr-2017	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP202A: Phenoxyacetic Acid Herbicides by LCMS							
Soil Glass Jar - Unpreserved (EP202)							
QC8	**20-Mar-2017**	**28-Mar-2017**	03-Apr-2017	✓	**28-Mar-2017**	07-May-2017	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	5	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	8	**25.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	9	**22.22**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 504,505)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40.
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve.
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	SOIL	In house: LCMS (Electrospray in negative mode). Residues of acid herbicides are extracted from soil samples under the alkaline condition. An aliquot of the alkaline aqueous phase is taken and acidified before a SPE cleanup. After eluting off from the SPE cartridge, residues of acid herbicides are dissolved in HPLC mobile phase prior to instrument analysis.

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202)
Extraction for Phenoxy Acid Herbicides in Soils.	EP202-PR	SOIL	In-House: Alkaline extract followed by SPE clean up of acidified portion of the sample extract.
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.

Preparation Methods	Method	Matrix	Method Descriptions
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 3458

coffey

Consigning Office: Warabrook

Report Results to: Libby Betz Mobile: Email: Libby.betz @coffey.com

Invoices to: " " Phone: 4016 2300 Email: " " @coffey.com

Project No: ENAWWARA045B1AA Task No:

Project Name: Winders Lane Laboratory: MHT

Sampler's Name: J. Kirk Project Manager: L. Betz

Special Instructions:

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)
	SS 1	14-1-15	AM	Soil	J, Z	
	SS 2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11					
	Pond 1 SW 1	14-1-15		Water	P, A, V	
	" 2 SW 2					
	" 3 SW 3					
	Pond 1 Sed 1			Soil	J	
	" 2 Sed 2					
	" 3 Sed 3					

Analysis Request Section

Metals 8 std
OCP/OPP
Suite 810
pH
Conductivity

NOTES

RELINQUISHED BY		RECEIVED BY	
Name: J. Kirk	Date: 14.1.15	Name: Caltheia	Date: 15/1
Coffey Environments	Time: 3:30	Company: EF/mgt	Time: 1.25 pm
Name:	Date:	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☑

All Documentation is in Proper Order ☐/

Samples Received Properly Chilled ☑/

Lab. Ref/Batch No. 444435

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

coffey

Consigning Office: Warabrook
Report Results to: Libby Betz | Mobile: | Email: libby.betz @coffey.com
Invoices to: " " | Phone: 4016 2300 | Email: " " @coffey.com

Project No: ENAUWARA04581AA | Task No:
Project Name: Winders Lane | Laboratory: MGT
Sampler's Name: J. Kirk | Project Manager: L. Betz
Special Instructions: F9BUR503 00

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Metals 8 sld	OCP/OPP	Suite B10	Suite B1	S-26	NOTES
	QC1	14-1	AM	Water			✓	✓				
	2	↓	↓	Soil				✓				
	3	↓	↓	↓						✓		Send to ALS
	4	↓	↓	Water			✓	✓				
	5	↓	↓	↓					✓			

RELINQUISHED BY		RECEIVED BY	
Name: J. Kirk	Date: 14/1/15	Name: Catherine	Date: 15/1
Coffey Environments	Time: 7:30	Company: EF/mgt	Time: 1.25 pm
Name:	Date:	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)
- All Samples Recieved in Good Condition ☑
- All Documentation is in Proper Order ☑
- Samples Received Properly Chilled ☑
- Lab. Ref/Batch No. 444435

***Container Type & Preservation Codes: P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock Bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative, **OP** - Other Preservative

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 4572

coffey

Consigning Office: WARABROOK

Report Results to: DAMIEN HENDRICKX Mobile: 0431633791 Email: damien.hendrickx @coffey.com

Invoices to: DAMIEN HENDRICKX Phone: (02)4016230 Email: damien.hendrickx @coffey.com

Project No: 754-NTLEN202989 Task No:

Project Name: Lochinvar Laboratory: #Eurofins

Sampler's Name: Sean Blackford Project Manager: Damien Hendrickx

Special Instructions:

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)
	SS12	20/3/17	PM	Soil	J	Std
	SS13					
	SS14					
	SS15					
	SS16					
	SS17					
	SS18					
	SS19					
	SS20					
	SS21					
	SS22					
	SS23					
	SP1					
	SS24					
	SS25					
	POND4-SW4			WATER	G, P	
	POND 5-SW5					

Heavy Metals (8) | TPH/BTEX | PAH | OCP+OPP | Phenoxy Acid Herbicides | PH | CEC | Clay Content

NOTES

HOLD

RELINQUISHED BY

Name: SEAN BLACKFORD Date: 21.3.17

Coffey Environments Time:

Name: Date:

Company: Time:

RECEIVED BY

Name: SUE Date: 22/3/17

Company: Time: 2-30PM

Name: TOM WONG Date: 23/3/17

Company: Eurofins/mgt Time: 8:30 AM

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☑

All Documentation is in Proper Order ☑

Samples Received Properly Chilled ☑

Lab. Ref/Batch No. 539344.

***Container Type & Preservation Codes:** **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock Bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative, **OP** - Other Preservative

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

 4573

coffey

Consigning Office: WARABROOK

Report Results to: DAMIEN HENDRICKX Mobile: 0433433791 Email: damien.hendrickx @coffey.com

Invoices to: DAMIEN HENDRICKX Phone: (02)40162300 Email: damien.hendrickx @coffey.com

Project No: E754-NTLEN202989 Task No:

Project Name: Lochinvar Laboratory: Eurofins

Sampler's Name: Sean Blackford Project Manager: Damien Hendrickx

Special Instructions:

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)
	QC6	20/3/17	PM	SOIL	J	Std
	QC7	↓	↓	↓	↓	↓
	QC8					
	QC9	↓	↓	WATER	G, P, 2xV	↓

Analysis Request Section

Heavy Metals (8) | NEPM + BTEX | PAH | OCP + OPP | Phenoxy Acid Herbicides

NOTES

Send to ALS for analysis

RELINQUISHED BY

Name: SEAN BLACKFORD Date: 21.3.17 →

Coffey Environments Time:

Name: Date: →

Company: Time:

RECEIVED BY

Name: SUE Date: 22/3/17

Company: Time: 2-30PM

Name: TONY WONG Date: 23/3/17

Company: Eurofins|mgt Time: 8:30AM

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☑

All Documentation is in Proper Order ☑

Samples Received Properly Chilled ☑

Lab. Ref/Batch No. 539344

***Container Type & Preservation Codes:** **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock Bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative, **OP** - Other Preservative

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