ProTen

# Rushes Creek Poultry Production Farm

SSD 7704

## Section 4.55(1A) Modification Report

Prepared for:
ProTen Tamworth Pty Limited

May 2021



Prepared by:

eme ADVISORY

# RUSHES CREEK POULTRY PRODUCTION FARM, SSD 7704

## Section 4.55(1A) Modification Report

### PREPARED BY


| | |
|---|---|
| Name: | Eryn Bath<br>*Principal Consultant* |
| Qualifications: | Bachelor of Environmental Science<br>Graduate Diploma of Environmental Engineering |
| Company: | EME Advisory |
| Address: | 17 Carlotta Street, Greenwich NSW 2065 |


### APPLICANT

| | |
|---|---|
| Company: | ProTen Tamworth Pty Limited |
| Address: | PO Box 1746, North Sydney NSW 2060 |

### APPROVED DEVELOPMENT

| | |
|---|---|
| Development Consent: | SSD 7704 |
| Title: | Rushes Creek Poultry Production Farm |
| Description: | Intensive Livestock Agriculture - poultry broiler production farm |
| Development Site: | Lot 1 DP 44215; Part Lot 1 DP 1108119; Lot 1 DP 1132298; Lots 26, 85, 86, 101, 118, 165, 166 and 171 DP 752169; Part Lot 143 DP 752189; Lot 1 DP 1132078; Lot 1 DP 1141148; and an unformed Council public road traversing through Lot 171 DP 752169 |

### PROPOSED MODIFICATION

| | |
|---|---|
| Approval Pathway: | Section 4.55(1A) of the *Environmental Planning and Assessment Act 1979* |
| Description: | Allow an alternative remediation strategy and remediation timing for an area of arsenic impacted soil outside of the development disturbance footprint. |

### DECLARATION

We confirm that we have prepared the contents of this document and to the best of our knowledge:

- It contains all available information that is relevant to the environmental, social and economic impact assessment of the proposal; and
- It is true in all material particulars and does not, by its presentation or omission of information, materially mislead.

EME Advisory

Eryn Bath
6 May 2021

# TABLE OF CONTENTS

## TABLES



## FIGURES



## APPENDICES

# 1 INTRODUCTION

## 1.1 Background

ProTen Tamworth Pty Limited (ProTen) was granted Development Consent SSD 7704 from the Department of Planning, Industry and Environment (DPIE) (as delegate for the Minister for Planning and Public Spaces) on 16 April 2020 to construct and operate an intensive poultry broiler production farm within a rural area known as Rushes Creek in the Tamworth Regional Local Government Area (LGA). In summary, the Rushes Creek Poultry Production Farm (the "Development") will comprise a total of 54 poultry sheds housing a combined population of 3,051,000 broiler birds, along with various items of ancillary infrastructure.

The following should be referred to for a detailed description of the approved Development:

- *Environmental Impact Statement, Intensive Livestock Agriculture, Rushes Creek Poultry Production Farm, SSD 7704* (SLR Consulting Australia [SLR] 2018a) (EIS), including all appendices;
- *Rushes Creek Poultry Production Farm, SSD 7704, Response to Submissions* (EME Advisory [EME] 2019a) (RTS), including all appendices; and
- *Rushes Creek Poultry Production Farm, SSD 7704, Supplementary Response to Submissions* (EME 2019b) (Supplementary RTS), including all appendices.

This Modification Report has been prepared to accompany an application from ProTen seeking to modify Development Consent SSD 7704 under section 4.55(1A) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) as outlined in **Section 1.2** and detailed in **Section 3**. It presents a focussed evaluation of the modification, including relevant environmental, social and economic considerations.

## 1.2 Proposed Modification

The *Stage 1 Preliminary Site Investigation* (SLR 2018b) (PSI) prepared for the EIS identified an area of environmental concern (AEC) within the Development Site, being a former sheep dip, and concluded that further investigation was necessary. A subsequent *Detailed Site Investigation* (SLR 2019a) (DSI) found soil arsenic levels in this AEC above the relevant health investigation level for standard residential land use with garden/accessible soil (HIL-A) guideline value in the *National Environmental Protection (Assessment of Site Contamination) Measure* (National Environmental Protection Council 2013) (ASC NEPM).

A *Remedial Action Plan* (SLR 2019b) (2019 RAP) was prepared for the RTS and approved as part of Development Consent SSD 7704. The remediation strategy in the approved 2019 RAP is excavation of the arsenic impacted soil and off-site disposal at a suitably licensed landfill facility. It has since been identified that the landfill at Kemps Creek on the western fringes of Sydney is the only landfill licensed in NSW to take the contaminated soil. Due to the Development Site's remote location and distance to Kemps Creek, along with the significant landfill gate fees, this option is now the least fiscally viable. Furthermore, transport and disposal of the contaminated soil to landfill is less preferable from an environmental perspective, including in consideration of the "waste hierarchy" under the *Waste Avoidance and Resource Recovery Act 2001* (WARR Act) which promotes the diversion of waste from landfill disposal.

Consequently, ProTen is seeking a development modification in order to:

- Revise the approved 2019 RAP to allow capping and containment of the arsenic impacted soils in-situ as an alternative remediation strategy;
- Permit the remediation works to be completed within 12 months of commencing construction;
- Allow demolition and removal of the old sheep shed within the remediation area; and

- Allow the relocation of one of the approved farm managers' houses at Farm 2 and the electricity line proposed to service this house in order to provide separation from the remediation area.

Further details on the proposed modification, including specific consent conditions to be modified, are provided in **Section 3**.

## 1.3 Modification Approval Pathway

ProTen is seeking to modify Development Consent SSD 7704 under Section 4.55(1A) of the EP&A Act. This Modification Report demonstrates that the proposed modification is of minimal environmental impact and that the Development, as proposed to be modified, will be substantially the same development for which consent was originally granted.

## 1.4 Consultation

Consultation has been undertaken with the key government agencies in relation to the proposed modification. **Table 1** provides a summary of the consultation activities undertaken and the key issues raised and/or outcomes.

**Table 1 Government Agency Consultation**

| Date | Agency | Method | Purpose / Outcome / Issues Raised |
|---|---|---|---|
| 2 March 2021 | EPA | Phone | Introduced the possibility of an alternative remediation approach comprising containment of the impacted soils on-site either in-situ or in a containment cell.<br>The EPA indicated:<br>• That they would be happy to consider a revised RAP with on-site containment instead of off-site disposal;<br>• There shouldn't be any reason that remediation works should hold up commencing construction given the arsenic impacted soil is not within the development disturbance footprint and is not considered high-risk; and<br>• A 12 month timeframe for completing the remediation would be appropriate. |
| 8 March 2021 | DPIE | Email | This email:<br>• Introduced the possibility of an alternative remediation approach comprising containment of the arsenic soils on-site either in-situ or in a containment cell;<br>• Queried the need to modify condition B51 in relation to updating the approved 2019 RAP; and<br>• Queried whether condition B52 could be modified under section 4.55(1) given it is essentially a rewording of the condition to amend remediation timing.<br>The DPIE responded via email on 9 March 2021 advising:<br>• If the 2019 RAP is amended it would be inconsistent with the approved DA documents. As such, DPIE recommended that ProTen seek to modify the consent to amend the RAP;<br>• The early consultation completed with the EPA will assist in ensuring the modification is processed efficiently; and<br>• Changing the timing of remediation in condition B52 would need to be done as a section 4.55(1A) modification application. |
| 8 March 2021 | EPA | Email | Copied in on the above email correspondence with DPIE |
| 23 April 2021 | EPA | Email | A copy of the Revised RAP (SLR 2021) was provided for review and comment.<br>The EPA responded via email on 6 May 2021 advising that there did not appear to be anything specifically outstanding based on a brief review, and that their internal contaminated sites team will provide advice when it is formally received from DPIE. |
| 23 April 2021 | Council | Email | A copy of the Revised RAP (SLR 2021) was provided for review and comment. No response received to date. |

# 2 APPROVED DEVELOPMENT

This section provides an overview of the Development Site and the Development approved under Development Consent SSD 7704. The documents listed in **Section 1.1**, being the EIS (SLR 2018a), RTS (EME 2019a) and Supplementary RTS (EME 2019b), should be referred to for further details.

## 2.1 Development Site

### 2.1.1 Overview

The Development Site comprises approximately 1,016 hectares of rural land in an area known as Rushes Creek approximately 43 kilometres (km) northwest of Tamworth and 33 km northeast of Gunnedah in the New England North West region of New South Wales (NSW) (see **Figures 1** and **2**).

Rushes Creek Road, which is a sealed two-lane rural road, forms the Development Site's eastern boundary and connects the Development Site to the Oxley Highway (NSW State Route B56). The Oxley Highway provides a connection to Tamworth, being the area's major centre and home to the various poultry industry service facilities required to support a broiler production farm. The Namoi River is located to the north of the Development Site and Lake Keepit is located to the west and southwest of the Site.

The long-standing and existing use of the Development Site is traditional agricultural production, including both livestock grazing and cropping. The extent of historical clearing and agricultural use is evident on the aerial image on **Figure 2**.

### 2.1.2 Zoning

Under the provisions of the *Tamworth Regional Local Environmental Plan 2010* (Tamworth LEP), the Development Site is zoned "RU1 Primary Production".

All land adjoining the Development Site is also zoned RU1 Primary Production.

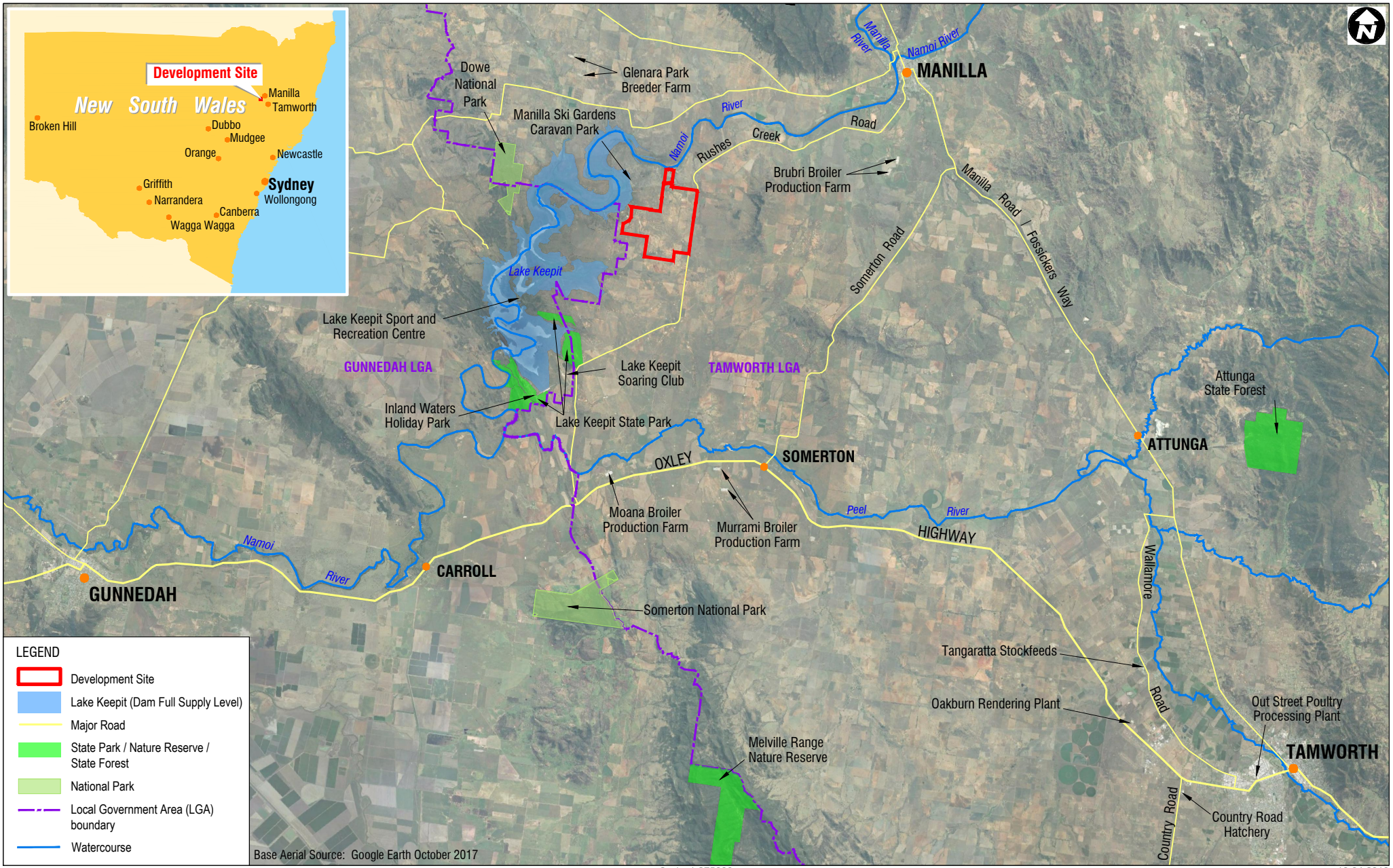
### 2.1.3 Surrounding Land Uses and Receptors

The surrounding area is primarily characterised by traditional agricultural production, along with recreational activities around Lake Keepit. The various recreation facilities are identified on **Figure 3**.

The nearest populated areas (see **Figure 1**) are:

- Somerton, approximately 12 km to the southeast of the Development Site. The Somerton village and surrounding rural area has a population of around 277, according to the 2016 Australian Bureau of Statistics (ABS) census; and
- Manilla, approximately 13 km to the northeast of the Development Site. The Manilla village and surrounding rural area has a population of around 2,550, according to the 2016 ABS census.

The Development Site has a relatively low density of surrounding privately-owned residences, with the nearest shown on **Figure 3**.




H:\Projects-SLR\610-Snr\SYD\610-SYD\610.17991 Rushes Creek Draft EIS QA\06 SLR Data\01 CADGIS\CAD\EIS CURRENT\RESPONSE TO SUBMISSIONS\SLR61017991_F1_RegLoc_01.dwg

Scale: 1:275000
(GDA94) MGA Zone 56

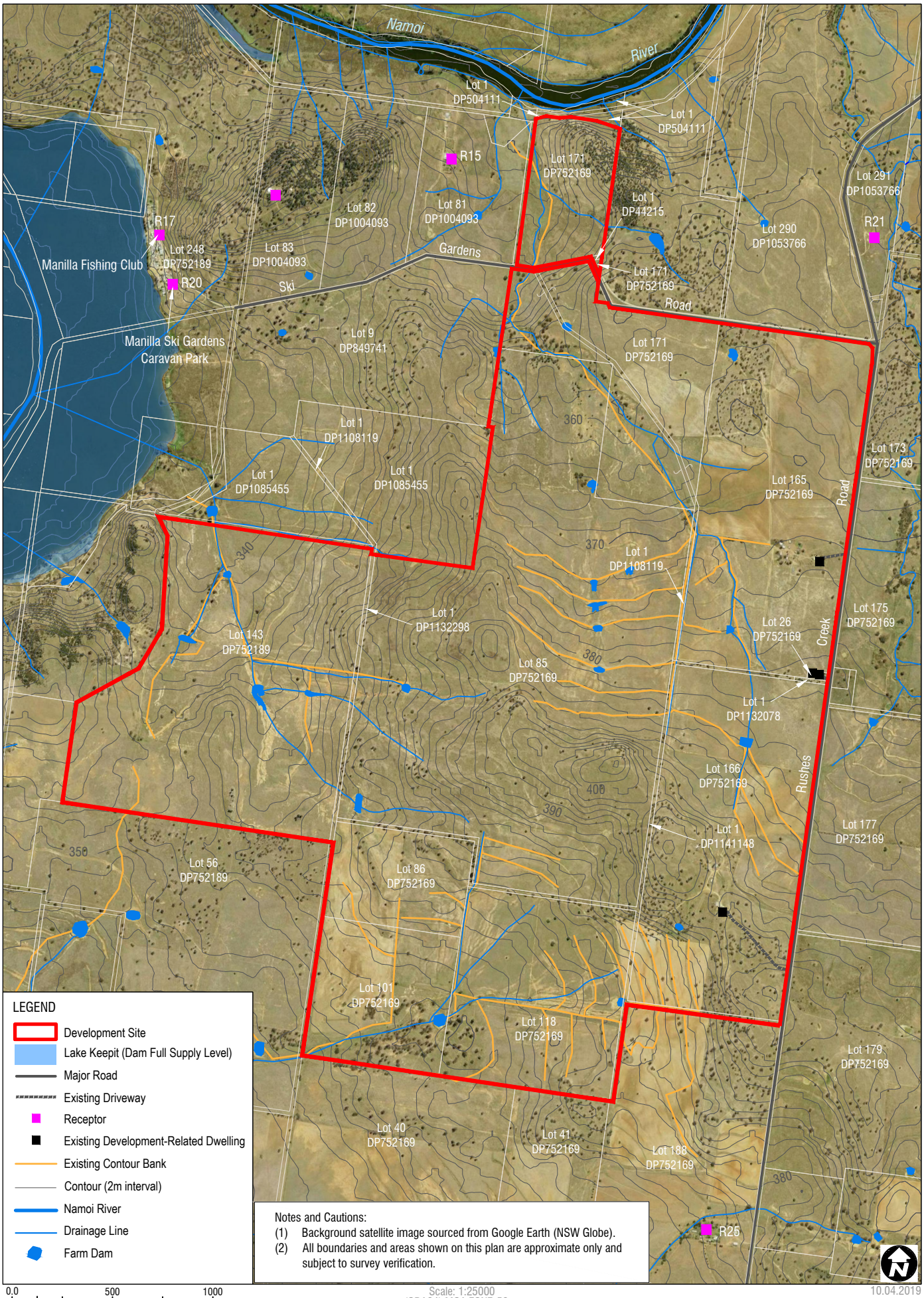
10.04.2019
610.17991

SLR
www.slrconsultingaustralia.com.au PH: 61 2 4037 3200

EME advisory

**Regional Locality**

**FIGURE 1**



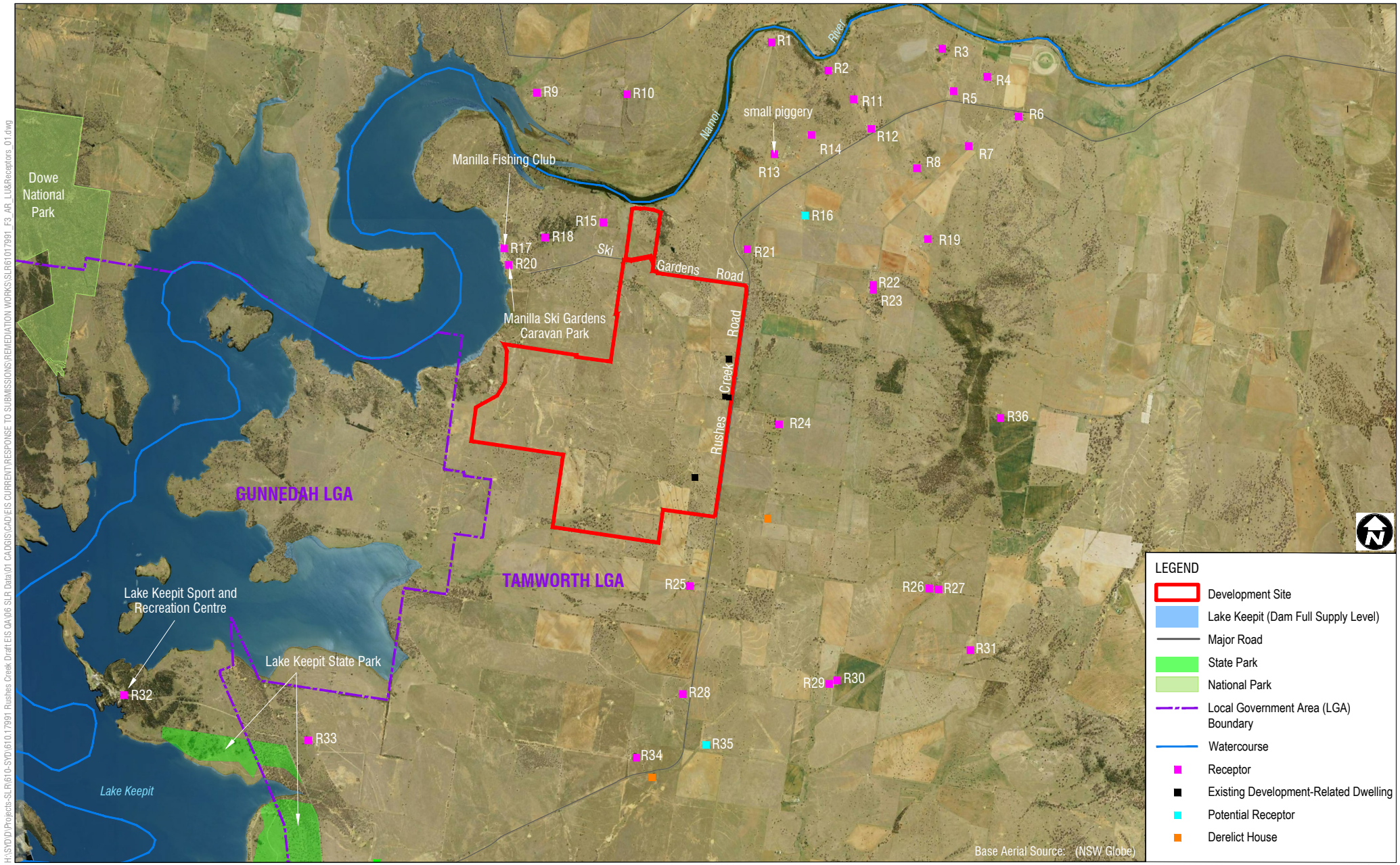

H:\Projects-SLR\610-SrvSYD\610.17991 Rushes Creek Draft EIS QA\06 SLR Data\01 CADGIS\CAD\EIS CURRENT\RESPONSE TO SUBMISSIONS\SLR61017991_F2_DevSite_01.dwg

SLR
www.slrconsultingaustralia.com.au PH: 61 2 4037 3200

EME advisory

**Development Site**

**FIGURE 2**




H:\SYD\Projects-SLR\610-SYD\610.17991 Rushes Creek Draft EIS QA\06 SLR Data\01 CADGIS\CAD\EIS CURRENT\RESPONSE TO SUBMISSIONS\REMEDIATION WORKS\SLR610.17991_F3_AR_LU&Receptors_01.dwg

Scale: 1:130000
(GDA94) MGA Zone 56

28.04.2021
610.17991

SLR
www.slrconsultingaustralia.com.au PH: 61 2 4037 3200

EME advisory

**Surrounding Land Uses and Receptors**

**FIGURE 3**

## 2.2 Development Description Summary

The Development comprises four individual poultry production units (PPUs), which are identified as Farms 1 to 4, where broiler birds will be grown for the purpose of producing poultry meat (for human consumption). Each farm will contain between 10 and 18 tunnel-ventilated fully-enclosed climate-controlled poultry sheds, which will each have the capacity to house 56,500 birds, along with associated support and servicing infrastructure. The Development will comprise a total of 54 poultry sheds, housing a combined site population of 3,051,000 birds.

The Development will generally be constructed, operated and managed in accordance with current industry best practice standards, including the relevant requirements/recommendations in:

- *RSPCA Approved Farming Scheme Standards – Meat Chickens* (RSPCA Australia 2013); and
- *Best Practice Management for Meat Chicken Production in NSW* (Department of Primary Industries 2012).

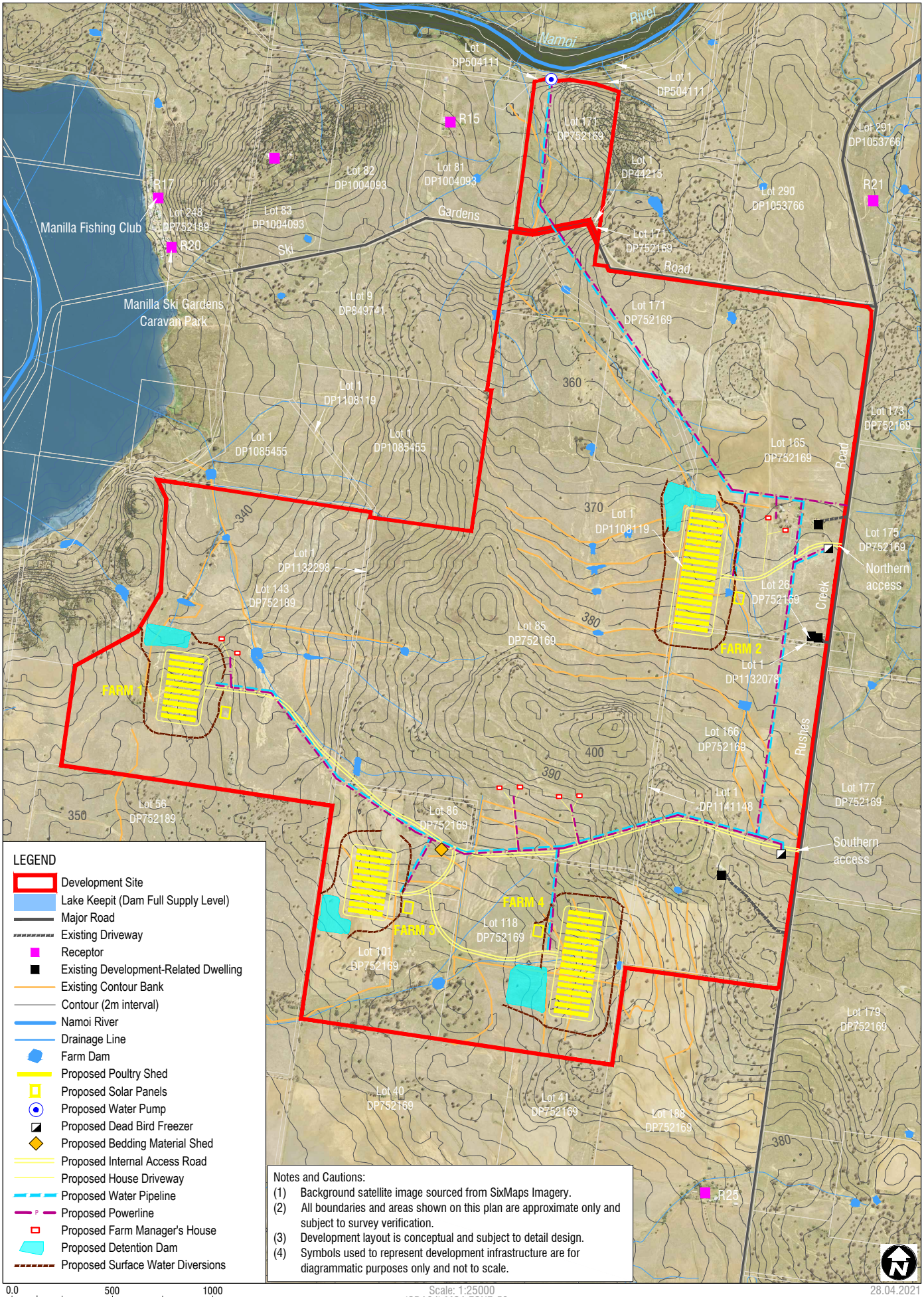
**Table 2** provides a summary of the various components of the Development, and **Figure 4** shows the conceptual layout of the Development

**Table 2 Development Description Summary**

| Aspect | Details |
|---|---|
| Purpose | Birds grown for the purpose of producing poultry meat |
| Number of PPUs | Four - Farms 1, 2, 3 and 4 |
| Total disturbance footprint | Approximately 92.81 ha |
| Number of poultry sheds | Farm 1 – 10 sheds<br>Farm 2 – 18 sheds<br>Farm 3 – 10 sheds<br>Farm 4 – 16 sheds<br>Total – 54 sheds |
| Type of poultry sheds | Tunnel-ventilated, fully-enclosed, climate-controlled |
| Poultry shed dimensions | 160 metres (m) long by 18 m wide by 4.7 m high (to roof ridge) |
| Poultry shed areas | Each shed – 2,880 square metres ($m^2$)<br>Total – 155,520 $m^2$ |
| Bird numbers | Each shed - 56,500 birds<br>Farm 1 – 565,000 birds<br>Farm 2 – 1,017,000 birds<br>Farm 3 – 565,000 birds<br>Farm 4 – 904,000 birds<br>Total – 3,051,000 birds |
| Maximum bird density within sheds | 34 kilograms per square metre ($kg/m^2$) |
| Hours of operation | 24 hours a day, 7 days a week |
| Production cycle length | Approximately 65 days, comprising maximum bird occupation of 55 days and cleaning phase of 10 days |
| Production cycles per year | Approximately 5.6 on average |
| Support/servicing infrastructure | • Eight houses to accommodate farm managers;<br>• Two access driveways from Rushes Creek Road and internal access roads;<br>• Water supply infrastructure to extract, transfer, treat and store water from the Namoi River; |

| | |
|---|---|
| | • Reticulated electrical supply infrastructure;<br>• Bedding material storage shed;<br>• Two dead bird freezers; and<br>• At each PPU:<br>– Staff amenities and workshop (office, change rooms, toilets, workshop, chemical store and pump room);<br>– Feed silos;<br>– Water storage tanks;<br>– Solar panels;<br>– Fuel and gas storage facilities;<br>– Generators;<br>– Vehicle wheel wash;<br>– Ring roads;<br>– Surface water management system, including upstream diversions; and<br>– Aerated wastewater treatment system. |
| Subdivision | Boundary adjustment to ensure each PPU, including associated ancillary support infrastructure and farm managers houses, is enclosed within its own lot. |
| Employment | Twenty (20) full-time equivalent employees. |
| Vehicle access | Two access driveways from Rushes Creek Road constructed to accommodate a basic left turn (BAL) treatment.<br>Internal access roads and ring roads around each PPU constructed as all-weather rural-type roads. |
| Traffic generation | Heavy vehicles – approximately 8,455 per year.<br>Light vehicles – approximately 4,597 per year. |
| Servicing | Electricity – solar panels and connection to Essential Energy's reticulated supply infrastructure. Generators for emergency use only.<br>Gas – bulk liquid petroleum gas (LPG) storage tanks.<br>Water – licensed surface water allocation from the Namoi River. |
| Waste management | Systems to manage all waste streams generated by the poultry production operation to ensure no on-site waste storage or disposal. |
| Surface Water Management | An engineered surface water management system at each PPU comprising upstream diversions, grassed swale drains, table drains and a detention dam. |
| External lighting | One light fixture over the front and rear loading-unloading areas of each poultry shed. |
| Landscaping | Landscape plantings to improve the visual and environmental amenity of the Development Site, including vegetation screens around the perimeter of each PPU. |

The commercial activities associated with the poultry operation will be largely confined to the four PPU sites and internal access roads. It is intended to continue using the residual land outside of the disturbance footprint within the Development Site for continued agricultural production purposes under some form of lease or share farming arrangement.




LEGEND

- Development Site
- Lake Keepit (Dam Full Supply Level)
- Major Road
- Existing Driveway
- Receptor
- Existing Development-Related Dwelling
- Existing Contour Bank
- Contour (2m interval)
- Namoi River
- Drainage Line
- Farm Dam
- Proposed Poultry Shed
- Proposed Solar Panels
- Proposed Water Pump
- Proposed Dead Bird Freezer
- Proposed Bedding Material Shed
- Proposed Internal Access Road
- Proposed House Driveway
- Proposed Water Pipeline
- Proposed Powerline
- Proposed Farm Manager's House
- Proposed Detention Dam
- Proposed Surface Water Diversions

Notes and Cautions:

(1) Background satellite image sourced from SixMaps Imagery.
(2) All boundaries and areas shown on this plan are approximate only and subject to survey verification.
(3) Development layout is conceptual and subject to detail design.
(4) Symbols used to represent development infrastructure are for diagrammatic purposes only and not to scale.

0.0 500 1000 m

Scale: 1:25000 (GDA94) MGA ZONE 56

28.04.2021 610.17991

H:\SYD\Projects-SLR\610-SYD\610.17991 Rushes Creek Draft EIS QA\06 SLR Data\01 CADGIS\CAD\EIS CURRENT\RESPONSE TO SUBMISSIONS\REMEDIATION WORKS\SLR610.17991_F4_AR_AppDevLayout_01.dwg

SLR
www.slrconsultingaustralia.com.au PH: 61 2 4037 3200

EME advisory

**Approved Development Layout**

**FIGURE 4**

## 2.3 Area of Environmental Concern

### 2.3.1 Existing Contamination

The PSI (SLR 2018b) prepared for the EIS identified one AEC within the Development Site, being a former sheep dip in Lot 165 DP 752169. The DSI (SLR 2019a) subsequently prepared for the RTS found soil arsenic levels in this AEC elevated above the relevant soil HIL-A guideline value in the ASC NEPM. **Figure 5** shows the location of the AEC and the estimated extent of arsenic contamination.

### 2.3.2 Remedial Action Plan

Based on the information acquired during the DSI (SLR 2019a), a RAP (SLR 2019b) (2019 RAP) was prepared and approved as part of Development Consent SSD 7704. Consent conditions B51 and B52 advise:

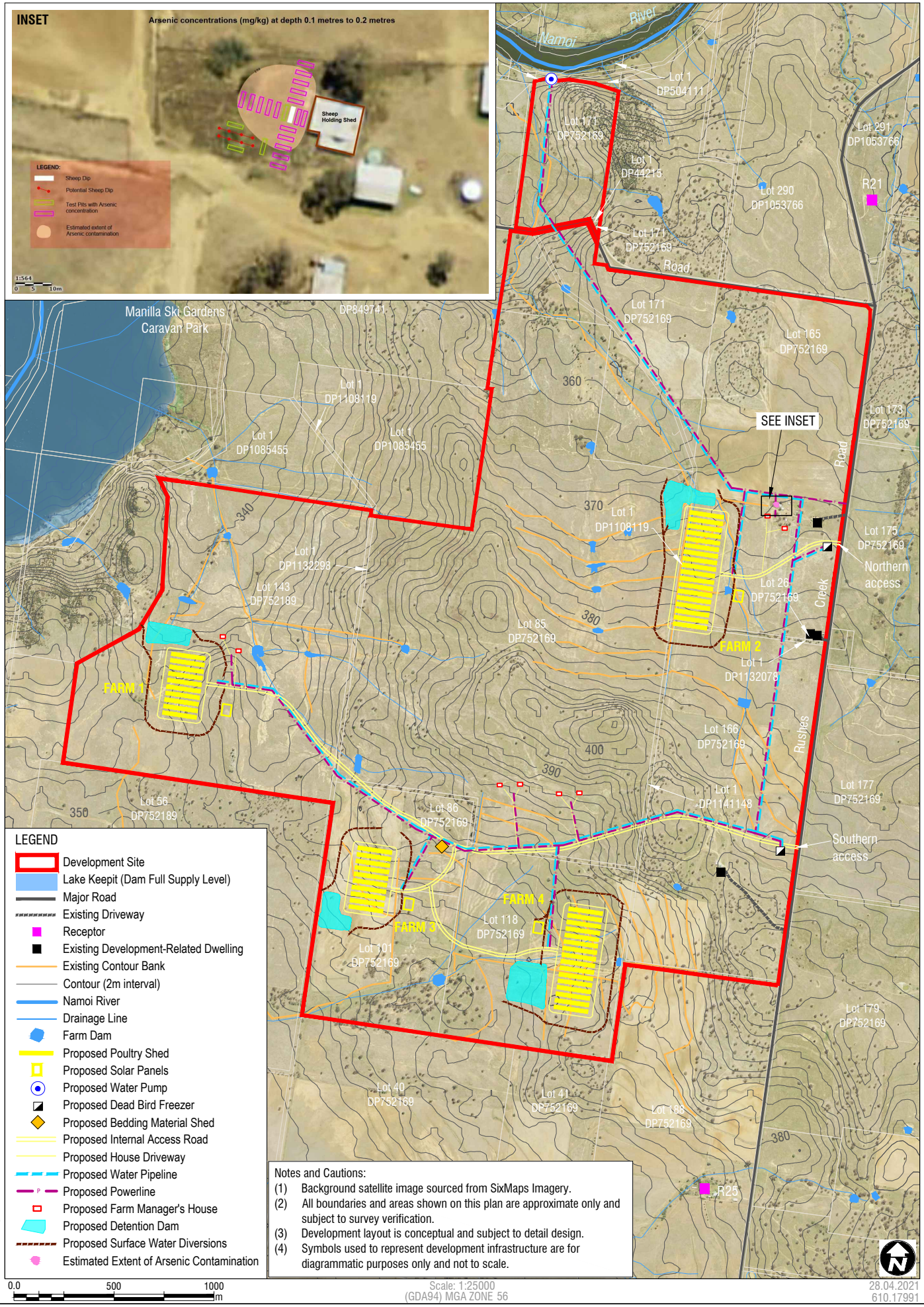
*B51 The Applicant must ensure the remediation works are undertaken by a suitably qualified and experienced consultant(s) in accordance with the approved Remedial Action Plan and relevant guidelines produced or approved under the Contaminated Land Management Act 1997.*

*B52 Within one month of the completion of the remediation works and prior to the commencement of construction, the Applicant must submit a validation report/letter to the satisfaction of the Planning Secretary, which has been prepared, or reviewed and approved, by a consultant certified under either the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme.*

The remediation strategy in the approved 2019 RAP is excavation of the arsenic contaminated soil (an estimated 330 cubic metres) and off-site disposal at a suitably licensed landfill facility.

SLR (2019b) concluded that the soils could be made suitable for the Development subject to:

- Implementation of the measures outlined in the RAP (SLR 2019b); and
- Preparation of a site validation report in accordance with *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Site* (Office of Environment and Heritage [OEH] 2011).




SLR
www.slrconsultingaustralia.com.au PH: 61 2 4037 3200

EME advisory

**Estimated Extent of Arsenic Contamination**

**FIGURE 5**

# 3 PROPOSED MODIFICATION

## 3.1 Overview

As outlined in **Section 2.3.2**, a RAP (SLR 2019b) was prepared and approved as part of Development Consent SSD 7704. The remediation strategy in the approved 2019 RAP is excavation of the arsenic contaminated soil and off-site disposal at a suitably licensed landfill facility.

For reasons outlined below in **Section 3.2**, ProTen is seeking a modification to Development Consent SSD 7704 under section 4.55(1A) of the EP&A Act in order to:

- Revise the approved 2019 RAP to allow capping and containment of the arsenic impacted soils in-situ as an alternative remediation strategy;
- Permit the remediation works to be completed within 12 months of commencing construction;
- Allow demolition and removal of the old sheep shed within the remediation area; and
- Allow the relocation of one of the approved farm managers' houses at Farm 2 and the electricity line proposed to service this house in order to provide separation to the remediation area.

These four modification items are addressed in further detail in **Sections 3.3** to **3.6**.

It is proposed to amend conditions B51 and B52 of Development Consent SSD 7704 as shown below in blue:

| | |
|---|---|
| *B51* | *The Applicant must ensure the remediation works are undertaken by a suitably qualified and experienced consultant(s) in accordance with the approved revised Remedial Action Plan (SLR Consulting Australia 2021) and relevant guidelines produced or approved under the Contaminated Land Management Act 1997.* |
| *B52* | *Completion of the remediation works must be completed within 12 months of commencing construction. Within one month of the completion of the remediation works ~~and prior to the commencement of construction~~, the Applicant must submit a validation report/letter to the satisfaction of the Planning Secretary, which has been prepared, or reviewed and approved, by a consultant certified under either the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme.* |

## 3.2 Rationale

Since approval of the RAP (SLR 2019b) as part of Development Consent SSD 7704 in April 2020, it has been identified that the landfill at Kemps Creek on the western fringes of Sydney, close to 500 km from the Development Site, is the only landfill licensed in NSW to take the arsenic contaminated soil. Due to the Development Site's remote location and distance to Kemps Creek, along with the significant landfill gate fees (tipping fees), this option is now the least fiscally viable. SLR (pers. comm. 4 May 2021) provided the following summary of remediation estimates obtain from three separate contractors during tendering of the currently approved remediation option of excavation and off-site disposal:

(a) Excavate, transport and dispose off-site at Kemps Creek – between $160,000 and $370,000 (note that the landfill gate fees included in these estimates may increase at the end of this financial year).

(b) Cap and contain on-site – between $70,000 and $130,000.

It is evident that the original remediation strategy of excavation and off-site disposal is cost prohibitive and unfeasible, particularly when the proposed alternative strategy of on-site capping and containment will achieve the same remediation goal.

Furthermore, transport and disposal of the contaminated soil to landfill is less preferable from an environmental perspective. The WARR Act aims (among other things) to divert waste from landfill and encourage the prioritisation of waste management through a waste hierarchy. The proposed modification supports the waste hierarchy by avoiding the need to dispose of the arsenic contaminated soils to landfill, which will also:

- Avoid the environmental impacts and risks associated with excavating and transporting the contaminated soil close to 500 km via the public road network; and
- Reduce the demand for scarce landfill airspace.

It is evident that the proposed alternative remediation strategy of on-site capping and containment is also justified on environmental grounds. The arsenic impacted soil is not within the development disturbance footprint and is not considered high-risk, and the alternative remediation strategy will achieve the same goal of reducing the risk posed to potential human and environmental receptors.

## 3.3 Revised Remedial Action Plan

Due to excavation, transport and off-site disposal of the arsenic impact soil now being the least fiscally viable remediation option, and also with disposal of contaminated soil to landfill less preferable under the waste hierarchy, SLR was engaged to review and revise the approved 2019 RAP in order to:

- Propose an alternative preferred remediation approach for the arsenic impacted soils;
- Guide the management of the arsenic impacted soil in a manner that mitigates potential human health risks that may arise from the proposed poultry farm development;
- Ensure the remediation is undertaken in accordance with applicable legislation, codes of practice and guidelines; and
- Ensure that the site is considered suitable for the proposed use (i.e. poultry farming).

The *Revised Remedial Action Plan* (SLR 2021) is contained in **Appendix A**, with key information summarised in the below sub-sections.

### 3.3.1 Objectives

The specific remediation objectives of the Revised RAP are:

- To effectively remediate arsenic in soil contamination present at the site, allowing the site to be utilised for its proposed land use;
- To ensure remedial works are undertaken in a manner that:
  - Is safe, with remediation works to be protective of human health and the environment;
  - Prevents potential cross-contamination with the implementation of appropriate controls; and
  - Adheres to applicable legislative requirements, including the contaminated land planning guidelines and any guidelines in force under the *Contaminated Land Management Act 1997* (CLM Act); and
- To ensure that remediation documentation is kept to a standard that will generally comply with the *Contaminated Land Guidelines: Consultants Reporting on Contaminated Land* (EPA 2020).

### 3.3.2 Remedial Goal

The primary remedial goal is to reduce the risk posed to human and environmental receptors from the identified arsenic impacted soil. Given the Development includes residential housing (low density), SLR (2021) conservatively selected the remedial action criteria (RAC) based upon a residential land use, with garden/accessible soil (HIL-A), as referenced in the ASC NEPM. Soils exceeding the adopted RAC require remediation and/or management.

### 3.3.3 Extent of Remediation Required

The remedial area is an unsealed area of the Development Site at and adjacent to the former sheep dip, located beside an old abandoned sheep shed within Lot 165 DP 752169. SLR (2021) advises that the remedial area covers approximately 700 square metres ($m^2$).

The lateral extents of elevated arsenic detected during the DSI (SLR 2019a) in the shallow, intermediate and deep portion of the remedial area are shown in Appendix A of the Revised RAP, with the extent presented based on exceedance of the adopted HIL-A guideline value of 100 milligrams per kilogram.

The maximum depth of elevated arsenic contamination detected during the DSI (SLR 2019a) was at 1.2 mbgl, which was the depth of practical refusal (on weathered shale). SLR (2021) notes that concentrations of arsenic decreased with depth.

### 3.3.4 Alternative Preferred Remedial Strategy

Based on the significant costs and environmental implications of off-site landfill disposal, consultation with the EPA, human and ecological health risk potential and the long-term site use, the alternative preferred remedial strategy is on-site capping and containment of arsenic contaminated soil.

#### Preparation Works

**Approvals and Notifications**

The remediation of soil impacted with arsenic is considered Category 2 remediation works (SLR 2021). In accordance with the requirements of the *State Environment Planning Policy No. 55 – Remediation of Land* (SEPP 55) for Category 2 remediation work, the following notices will be issued to Council:

- Notice of the proposed remediation work a minimum of 30 days before commencement; and
- Notice of completion of the remediation work and a Validation Report within 30 days of completion.

**Community Consultation**

While SLR (2021) advises that the remediation works are highly unlikely to impact adjoining neighbours, in-line with the commitments made in the EIS, ProTen will notify the surrounding residents of the remediation works a minimum of 2 days prior to commencement via a letter drop. The letter will provide an overview of remediation activities, advise expected works duration and hours, and advise relevant site contacts.

**Remediation Hours**

The remediation works will be undertaken during the approved construction hours, being 7:00 am to 6:00 pm Monday to Friday and 8:00 am to 1:00 pm on Saturdays. No audible work will be undertaken outside of these hours without the appropriate permissions.

### Site Establishment and Services

The remediation contractor will mobilise plant and equipment appropriate to the nature and extent of the required remediation works. Site establishment will include setting-up remediation works zones with appropriate fencing, barriers and/or signage and implementing appropriate environmental controls.

All services within the area will be identified prior to remediation and, if required, terminated or redirected (as appropriate). Based on service clearance activities undertaken during the DSI, it is not anticipated that any services will require termination/redirection.

### Demolition and Removal of Sheep Shed

The old sheep shed within the remediation area will be demolished and removed to enable delineation of contamination within the shed area to determine the required extent of capping. See **Section 3.4**.

### Delineation of Capping

The extent of the remedial area will be guided by laboratory analysis of delineation samples as indicated on **Figure 6** (sourced from SLR 2021). The remediation capping will be extended as required until the selected validation criteria are satisfied.

### Figure 6 Remedial Area Concept Capping Extent


Source: Revised RAP (SLR 2021)

### Site Surveying

Site survey will be undertaken prior to the commencement of capping works to establish the base level and to mark out the extent of capping. Survey will also be undertaken upon completion of each capping layer to validate the desired thickness, grade and extent of respective layers.

## Remedial Works

### Erosion and Sediment Control

A site-specific erosion and sediment control plan will be prepared and maintained by the remediation contractor in accordance with *Managing Urban Stormwater: Soils and Construction Volume 1* (Landcom 2004) (the "Blue Book").

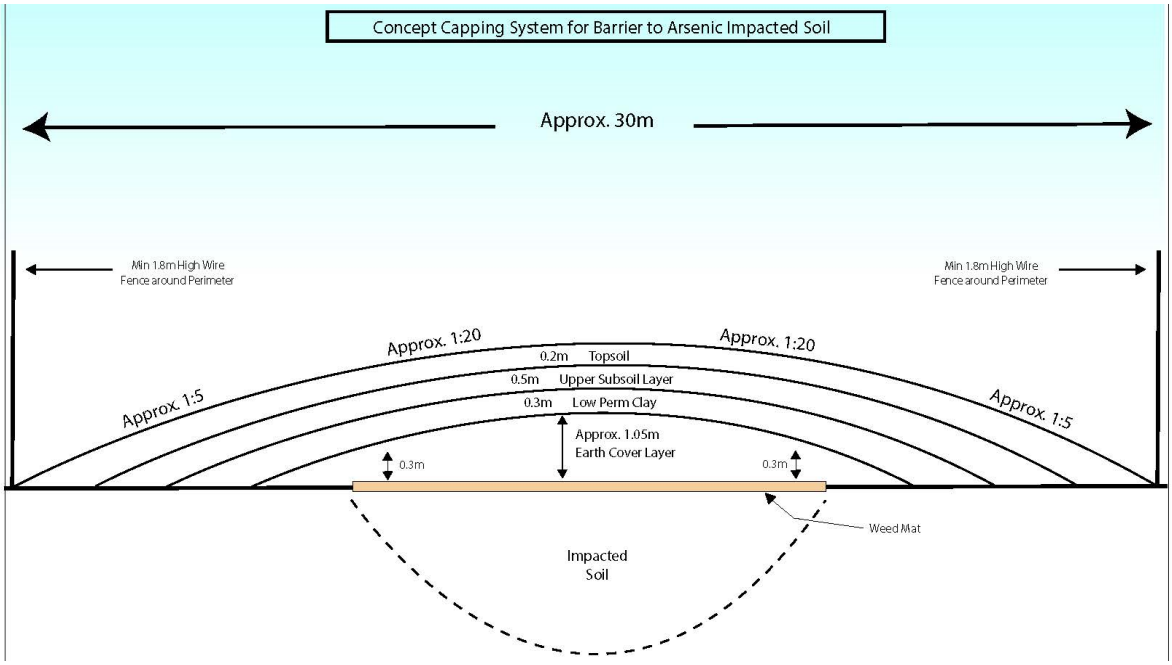
### Vegetation Removal

Prior to the placement of any capping material, vegetation in the remedial area will be removed to the extent practical without disturbing the soil. This will include mowing and placement of weed matting.

### Capping Construction

The remedial area should be capped in accordance with **Figure 7** (sourced from SLR 2021).

**Figure 7 Remedial Area Concept Capping System**




Source: Revised RAP (SLR 2021)

The layers of the capping are summarised in **Table 3**.

The cap will be a minimum of 5 percent (%) grade to enable surface water runoff, and a maximum of 20% grade to reduce the likelihood of erosion. Based on the low grades and the capping layer materials, including the topsoil with cover vegetation (grass), and the typically low rainfall in the area, SLR (pers. comm. 4 May 2021) advised that the potential for surface water to erode the capping layers is minimal.

**Table 3 Remedial Area Capping Summary**

| Capping Layer (from bottom to top) | Description |
|---|---|
| Layer 1 - earthen cover | Typically, clay rich layer of cover soil minimum of 0.3 m thick placed over the weed matting and thickened as required to achieve final cap grades. It will act as a working platform for construction of the low permeability clay layer. |
| Layer 2 - low permeability compacted clay | Low permeability compacted clay layer minimum of 0.3 m think placed over the earth cover layer. It will act to reduce surface water infiltration into the remedial area. |
| Layer 3 - upper subsoil | Typically, a sandy clay sub-base minimum 0.50 m thick placed over the low permeability compacted clay layer. It will act as a protection layer over the compacted clay and provide additional thickness between receptors and the arsenic impacted soil. |
| Layer 4 – topsoil layer | Topsoil or compost layer typically 0.20 m thick loosely placed (not compacted) over the upper subsoil layer. It will accommodate grasses planted as cover vegetation. |
| Total | Minimum 1.3 m thick |

**Vegetation Establishment**

The topsoil layer will be planted with grasses that are shallow rooted and, where possible, native to the area.

**Perimeter Fencing and Signage**

The remedial area will be secured with perimeter fencing and signage specifying arsenic impacted soil, no excavation can occur and contact details of relevant authorities/parties should access be required. It will require access for maintenance and mowing and, as such, will include a locked gate that can accommodate mowing equipment and plant that may be required for future maintenance works (if required).

### 3.3.5 Registration/Identification of Area

Given the presence of arsenic impacted soil, all efforts will be made to activate mechanisms that will prevent disturbance of the area. These will include identification/registration of the area on the following:

- The site's section 10.7 council planning certificate;
- Certificate of title;
- Dial Before You Dig; and
- The EPA's contaminated land register.

### 3.3.6 Imported Soil Material

SLR (2021) advises that the capping material can be virgin excavated natural material (VENM) sourced from within the Development Site and/or from an off-site source. Imported VENM will need to be accompanied by a certificate prepared by a suitably qualified consultant verifying that the material is VENM.

### 3.3.7 Environmental Management Plan

An Environmental Management Plan (EMP) will be prepared for the remedial area at the completion of the remediation and validation work. It will document the on-going management requirements for the remedial area and associated responsible parties.

### 3.3.8 Unexpected Finds Procedure

In accordance with condition B50 of Development Consent SSD 7704, SLR has prepared an updated Unexpected Finds Procedure for inclusion in the Construction Environmental Management Plan for the poultry farm development. A copy of this procedure is included in **Appendix B**.

### 3.3.9 Additional Measures

Refer to the Revised RAP (SLR 2021) in **Appendix A** for additional measures, including remediation contingency plan, validation works, data quality objectives, quality assurance/quality control, site and environmental management, and occupation health and safety requirements.

### 3.3.10 Conclusion

SLR (2021) considers that soils on the Site can be made suitable for the Development subject to:

- Implementation of the measures outlined in the Revised RAP (SLR 2021);
- Preparation of a site validation report; and
- Development of an EMP for the on-going management of the remedial area.

As such, ProTen is proposing to modify condition B51, as shown below in blue:

*B51 The Applicant must ensure the remediation works are undertaken by a suitably qualified and experienced consultant(s) in accordance with the approved revised Remedial Action Plan (SLR Consulting Australia 2021) and relevant guidelines produced or approved under the Contaminated Land Management Act 1997.*

## 3.4 Remediation Timing

Condition B52 of Development Consent SSD 7704 currently requires that remediation of the arsenic impacted soil be completed prior to commencing construction.

In early consultation with the EPA (see **Section 1.4**), they indicated that there shouldn't be any reason that remediation works should hold up commencing construction given the arsenic impacted soil is not within the development disturbance footprint and is not considered high-risk. The EPA also indicated that a 12 month timeframe for completing the remediation would be appropriate.

As such, ProTen is proposing to modify condition B52, as shown below in blue, to allow remediation works to be completed within 12 months of commencing construction:

*B52 Completion of the remediation works must be completed within 12 months of commencing construction. Within one month of the completion of the remediation works ~~and prior to the commencement of construction~~, the Applicant must submit a validation report/letter to the satisfaction of the Planning Secretary, which has been prepared, or reviewed and approved, by a consultant certified under either the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme.*

## 3.5 Demolition of Sheep Shed

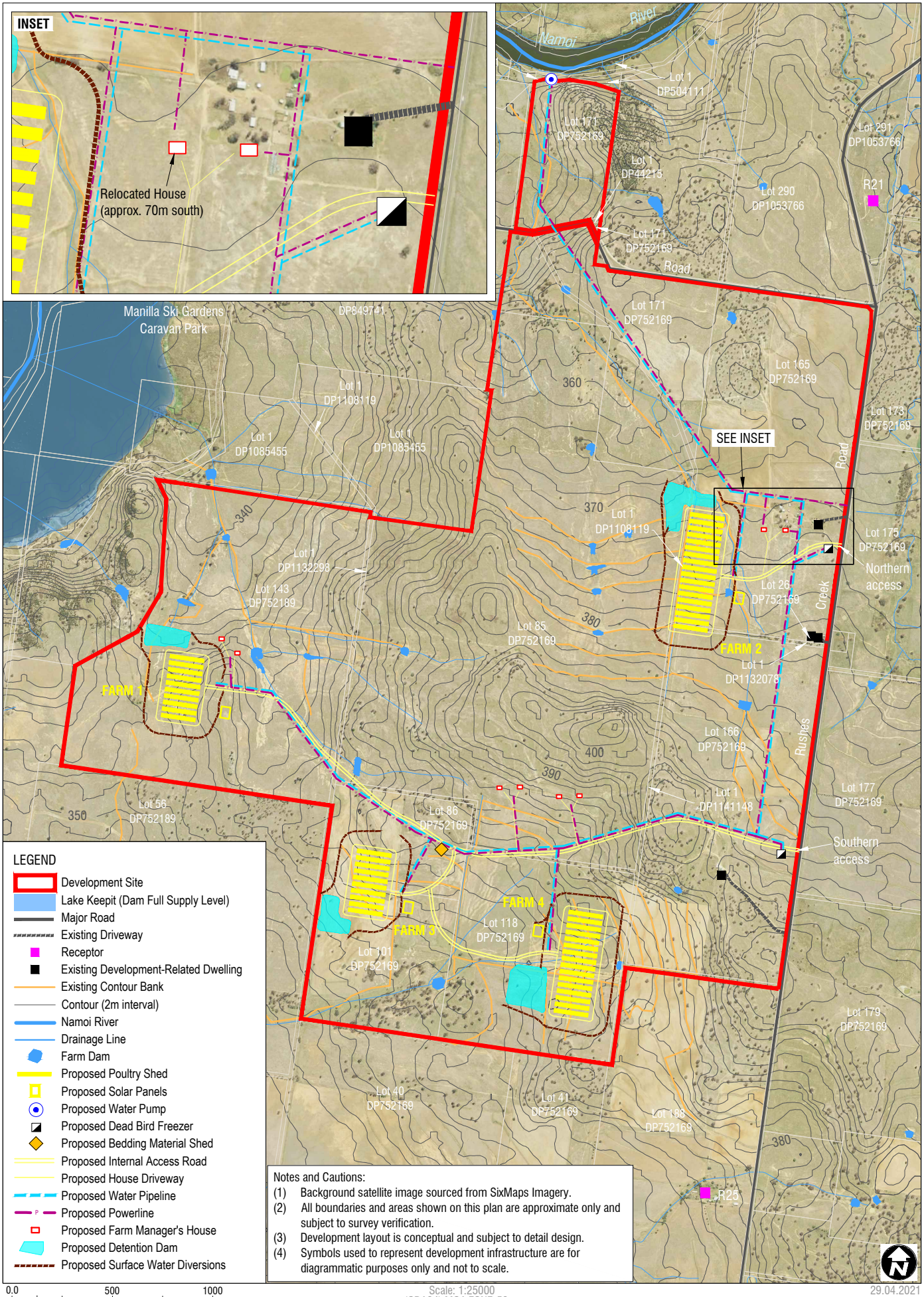
As part of the site preparation for the alternative remediation strategy, the old sheep shed within the remediation area will be demolished and removed to enable delineation of contamination within the shed area to determine the required extent of capping. The shed measures approximately 15 m long by 15 wide and is comprised of primarily timber and corrugated metal sheeting. It is in disrepair.

The demolition works will be carried out in accordance with *AS2601-2001 The Demolition of Structures* (Standards Australia 2001) (as per consent condition A17) and the *Code of Practice Demolition Work* (Safe Work Australia 2016). Demolition materials and waste streams will be separated for reuse, recycling or disposal at a suitably licensed waste facility.

The site will be remediated and managed in accordance with the Revised RAP (see **Section 3.2** and **Appendix A**) and the EMP to be prepared for the remedial area at the completion of works (see **Section 3.2.7**).

## 3.6 Relocation of Approved House

ProTen proposes to relocate one of the farm managers' houses approved for Farm 2 approximately 70 m to the south in order to increase the separation distance to the remediation area and shift the electricity line proposed to service this house approximately 70 m to the west in order to avoid the need to traverse the remediation area. **Figure 8** shows the relocated house and electricity line. Vehicular access to the farm manager's house would remain the same as currently approved.




SLR
www.slrconsultingaustralia.com.au PH: 61 2 4037 3200

EME advisory

**Updated Development Layout - Farm 2 Manager's House**

**FIGURE 8**

# 4 PLANNING CONSIDERATIONS

## 4.1 Modification Approval Pathway

The Rushes Creek Poultry Production farm was granted Development Consent SSD 7704 from DPIE (as delegate for the Minister for Planning and Public Spaces) on 16 April 2020 under Part 4 of the EP&A Act.

ProTen is now seeking to modify Development Consent SSD 7704, as described in **Section 3**, under section 4.55(1A) of the EP&A Act. The requirements of section 4.55(1A) are listed in **Table 4**, with commentary provided as to how each requirement is addressed by the proposal.

**Table 4 Section 4.55(1A) Modification Requirements**

| Section 4.55(1A) | Proposed Modification |
|---|---|
| ***Modifications involving minimal environmental impact*** *A consent authority may, on application being made by the applicant or any other person entitled to act on a consent granted by the consent authority and subject to and in accordance with the regulations, modify the consent if -* | |
| *(a) it is satisfied that the proposed modification is of minimal environmental impact, and* | The modification does not involve any changes to the construction, operation or management of the poultry farm itself. It is simply to allow an alternative remediation strategy and remediation timing for an area of arsenic impacted soil outside of the development disturbance footprint.<br>As outlined in **Section 3.2**, the alternative remediation strategy is justified on environmental grounds and will achieve the same remediation goal as the original strategy, being to reduce the risk posed to potential human and environmental receptors.<br>**Section 5** demonstrates that the proposed modification poses negligible environmental impacts over and above what has already been assessed and approved. |
| *(b) it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which the consent was originally granted and before that consent as originally granted was modified (if at all), and* | The term "substantially the same development" has been interpreted by the NSW Land and Environment Court:<br>• The meaning of "modify" is to alter without radical transformation (Transport Action Group Against Motorway Inc v Roads and Traffic Authority 1999);<br>• The term "substantially" means "essentially or materially having the same essence" (Moto Projects (No 2) Pty Ltd v North Sydney Council 1999).<br>The poultry farm development, as proposed to be modified, will be substantially the same development for which consent was originally granted under SSD 7704. The modification does not involve any changes to the construction, operation or management of the poultry farm itself, with the primary use and core characteristics of the approved Development remaining the same. It is simply to allow an alternative remediation strategy and remediation timing for an area of arsenic impacted soil outside of the development disturbance footprint. |
| *(c) it has notified the application in accordance with -*<br>*(i) the regulations, if the regulations so require, or*<br>*(ii) a development control plan, if the consent authority is a council that has made a development control plan that requires the notification or advertising of applications for modification of a development consent, and* | DPIE will refer a copy of the modification application to the EPA and Council (secondary approval authorities). |

| | |
|---|---|
| *(d) it has considered any submissions made concerning the proposed modification within any period prescribed by the regulations or provided by the development control plan, as the case may be.* | Submissions received from the EPA and/or Council will be considered by DPIE. |

In conclusion, a modification under section 4.55(1A) of the EP&A Act appears to be a suitable and lawful approval pathway for the proposed modification. This Modification Report demonstrates that the poultry farm development, as proposed to be modified, will be substantially the same development for which consent was originally granted under SSD 7704 and the associated environmental impacts will be negligible.

## 4.2 Key Legislation

**Table 5** lists the key relevant pieces of Commonwealth and NSW State legislation and indicates the implications, if any, for the proposed modifications.

**Table 5 Key Legislation**

| Legislation | Proposed Modification |
|---|---|
| **Commonwealth** | |
| *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) | The proposed modification, primarily comprising capping and containment of arsenic impacted soils in-situ as an alternative remediation strategy to excavation and off-site disposal, will not have any impact on any matters of national environmental significance listed under the EPBC Act. Furthermore, the modification will not result in any impact to the environment of Commonwealth land. |
| **NSW State** | |
| *Environmental Planning and Assessment Act 1979* (EP&A Act) | As advised in **Section 4.1**, ProTen is seeking to modify Development Consent SSD 7704 under section 4.55(1A) of the EP&A Act. The matters listed in section 4.15(1) of the EP&A Act, as relevant to the modification, have been appropriately addressed in this Modification Report. |
| *Protection of the Environment Operations Act 1997* (POEO Act) | As a result of having the capacity to accommodate more than 250,000 birds, the Development is a "scheduled activity" under clause 22 of Schedule 1 of the POEO Act and, as such, will require an EPL from the EPA as a secondary approval under Chapter 3 of the POEO Act. The EPA issued General Terms of Approval for the Development in December 2019.<br>DPIE will refer a copy of the modification application to the EPA as a secondary approval authority and contaminated land management authority. |
| *Contaminated Land Management Act 1997* (CLM Act) | SLR advises that the Revised RAP (SLR 2021) adheres to the applicable legislative requirements and guidelines in force under the CLM Act. |
| *Waste Avoidance and Resource Recovery Act 2001* (WARR Act) | The WARR Act aims (among other things) to divert waste from landfill and encourage the prioritisation of waste management through a waste hierarchy. The proposed modification supports the waste hierarchy by avoiding the need to dispose of the arsenic impacted soils to landfill, which will avoid also:<br>• Avoid the environmental impacts and risks associated with excavating and transporting the contaminated soil close to 500 km via the public road network; and<br>• Reduce the demand for scarce landfill airspace. |

## 4.3 SEPP No. 55 – Remediation of Land

SEPP 55 aims to provide a State-wide approach to the remediation of contaminated land. Clause 7(1) provides that a consent authority must not consent to the carrying out of any development on land unless:

*(a) it has considered whether the land is contaminated, and*

*(b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and*

*(c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.*

The PSI (SLR 2018b) prepared for the EIS identified one AEC within the Development Site (see **Figure 5**) and concluded that further investigation was necessary. The DSI (SLR 2019a) subsequently prepared found soil arsenic levels in this AEC elevated above the relevant soil HIL-A guideline value in the ASC NEPM.

The Revised RAP (SLR 2021) in **Appendix A** proposes an alternative remediation strategy for the arsenic impacted soils to what was detailed and approved in the 2019 RAP. It aims to ensure that the remediation is undertaken in accordance with applicable legislation, codes of practice and guidelines, and to ensure that the site is made suitable for the proposed use (i.e. poultry farming).

SLR (2021) considers that soils on the site can be made suitable for the Development subject to:

- Implementation of the measures outlined in the Revised RAP (SLR 2021);
- Preparation of a site validation report; and
- Development of an EMP for the on-going management of the remedial area.

## 4.4 Tamworth Regional Local Environment Plan 2010

The Tamworth LEP is a legal environmental planning instrument that guides planning decisions in the LGA and allows Council to manage the ways in which land is used through zoning and development consents. The Development Site is zoned RU1 Primary Production under the provisions of the LEP, with the zone objectives including:

- *To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.*
- *To encourage diversity in primary industry enterprises and systems appropriate for the area.*
- *To permit development for purposes where it can be demonstrated that suitable land or premises are not available elsewhere.*

The Development (intensive livestock agriculture) is permitted with consent within the RU1 Primary Production zone. The proposed modification does not pose any issues or conflicts in relation to permissibility or zone objectives. The poultry farm development, as proposed to be modified, will be substantially the same development for which consent was originally granted under SSD 7704. The modification does not involve any changes to the construction, operation or management of the poultry farm itself, with the primary use and core characteristics of the approved Development remaining the same. The modification is simply to allow an alternative remediation strategy and remediation timing for an area of arsenic impacted soil outside of the development disturbance footprint.

# 5 IMPACT ASSESSMENT

This section addresses the potential environmental, social and economic impacts associated with the proposed modification and nominates any additional or alternative controls considered necessary to mitigate and manage these impacts. The issues have been addressed in the same order as the EIS.

## 5.1 Odour

The Revised RAP (SLR 2021) advised that generation of significant odours during the remediation works is considered highly unlikely based on the findings of previous site assessments. The DSI (SLR 2019b) advised that olfactory evidence of odours was not observed in the vicinity of the sheep dip area. On this basis, no additional measures are needed in relation to odour.

## 5.2 Dust

While some dust emissions may be generated during demolition of the old sheep shed and the transport and placement of capping materials, such emissions will be short-term and will have nil to negligible impact over and above what has already been approved (i.e. excavation of contaminated soil and subsequent backfilling).

There are significant separation distances to surrounding privately-owned receptors and fugitive emissions during the short-term remediation works will be appropriately managed by good site management and implementation of the controls listed in the Summary of Commitments (see **Section 6**).

As recommended in the Revised RAP (SLR 2021), the following additional control has been added to the Summary of Commitments for dust management:

- Loaded heavy vehicles entering or exiting the Development Site will have their loads covered.

## 5.3 Traffic

The alternative remediation strategy for arsenic impacted soils, being on-site capping and containment, should reduce traffic generation in comparison with the currently approved strategy of excavation and off-site disposal and subsequent backfilling. Furthermore, it will avoid the need to transport arsenic contaminated soil close to 500 km via the public road network from the Development Site to the landfill at Kemps Creek on the western fringes of Sydney.

SLR (pers. comm. 10 January 2019) confirmed that there is significant additional capacity on the transport route (i.e. the Oxley Highway and Rushes Creek Road) for the "With Development" scenario at the 2029 design horizon. As such, the traffic to be generated by the remediation works, which will be short-term, will be able to be readily accommodated and no additional assessment is warranted. The controls listed in the Summary of Commitments (see **Section 6**) will be implemented to minimise the potential for traffic-related issues during the remediation works.

## 5.4 Surface Water

Surface water features within the Development Site and surrounds are shown on **Figures 1** and **2**. The nearest surface water features to the remediation area are:

- Intermittent drainage line - flowing northwesterly approximately 230 m from the remediation area;
- Rushes Creek - flowing northerly to the east of the Development Site into the Namoi River and is located approximately 600 m to the east of the remediation;

- Lake Keepit - located to the west and southwest of the Development Site and is approximately 3.1 km to the west of the remediation area (at dam full supply level); and
- Namoi River - flowing westerly to the north of the Development Site into Lake Keepit and is located approximately 2.3 km to the north-northwest of the remediation area.

The Development Site is not flood-liable land (as outlined in the EIS).

The proposed modification does not pose any impacts to surface water resources. In this regard:

- A site-specific erosion and sediment control plan will be prepared and maintained by the remediation contractor in accordance with the Blue Book;
- Given the significant separation distances, it is highly unlikely that any runoff from the remedial area will reach any surface water receptor (SLR 2021);
- The alternative remediation strategy does not involve the excavation of contaminated soil and avoids the associated risks to surface waters; and
- Based on the low grades and the capping layer materials, including the topsoil with cover vegetation (grass), and the typically low rainfall in the area, SLR (pers. comm. 4 May 2021) advised that the potential for surface water to erode the capping layers is minimal.

The controls listed in the Summary of Commitments (see **Section 6**) will be implemented to ensure negligible risk for surface water resources.

## 5.5 Groundwater

The Development Site is situated in the New England Fold Belt Groundwater Management Area under the *Water Sharing Plan for the NSW Murray Darling Basin Fractured Rock Groundwater Sources 2011*. The New England Fold Belt groundwater system is characterised as a fractured rock system, with groundwater dominantly stored and transmitted within fractures rather than the rock mass itself.

SLR (2019) undertook a search of the NSW Government's on-line groundwater works database as part of the DSI, which identified five registered groundwater bores within 1,000 m of the AEC. The groundwater bore search information is summarised in **Table 6**.

**Table 6 Groundwater Bores Within 1,000 m of the AEC**

| Registration ID | Approx. Distance and Direction from AEC | Authorised Purpose | Final Depth | Standing Water Level |
|---|---|---|---|---|
| GW967889 | 95 m to SE | Stock and domestic | 67 mbgl | 14 mbgl |
| GW011498 | 175 m to E | Not known | 24.4 mbgl | - |
| GW967028 | 700 m to NW | Stock | 55 mbgl | 17.3 mbgl |
| GW009093 | 790 m to NE | Not known | 8.5 mbgl | - |
| GW038206 | 790 m to NE | Not known | 12.8 mbgl | - |

Groundwater was not assessed during the PSI (SLR 2018b) or DSI (SLR 2019a) due to the limited leaching potential of the identified arsenic (confirmed with toxicity characteristic leaching procedure analysis), the observed reduction in concentration within a shallow depth and the anticipated depth of groundwater (SLR 2021).

The *Groundwater Bore Baseline Assessment* (SLR 2017) completed for the EIS identified the following in relation to the groundwater and strata beneath the Development Site:

- The shallow alluvial groundwater source is confined to the Namoi River channel itself and does not extend in to the Development Site.
- The deeper fractured rock groundwater source is generally between 10 and 20 mbgl across the Development Site and the water bearing zones are found at depths between 31.5 and 103.6 mbgl (as recorded in bore drill logs), indicating confined aquifer conditions.
- Bore drill logs indicate the presence of a weathered clay-rich regolith layer between 0.5 and 3 m think approximately 2 m below the surface immediately above basement rocks. The conceptual understanding is that this layer exists across the Development Site and the regional area acting as an aquitard (a geological formation that may contain groundwater however is not capable of transmitting significant quantities of it under normal hydraulic gradients). Its presence would restrict any downward movement into the groundwater system and confine the water bearing strata (as demonstrated by groundwater measurement across the Development Site).

On this basis, it is highly unlikely that groundwater will be impacted as a result of the alternative remediation strategy (SLR 2021) and no additional controls are considered necessary.

## 5.6 Biodiversity

The remediation area is located within an area of non-native groundcover (see Figure 31 in the EIS) and is removed from any high conservation areas. The proposed remediation works do not pose any direct risks to native flora or fauna and the measures listed in the Summary of Commitments (see **Section 6**) will be implemented to minimise any indirect risks to biodiversity.

## 5.7 Aboriginal Heritage

The remediation area is not located in the vicinity of any identified Aboriginal sites (see Figure 35 in the EIS) and the proposed remediation works do not appear to pose any risk to Aboriginal heritage. The measures listed in the Summary of Commitments (see **Section 6**) will be implemented to further minimise the risk to Aboriginal heritage during remediation works.

## 5.8 Noise

SLR (2021) advised that noise emissions from the short-term remediation works will not exceed the limits indicated in *AS 2436-2010 Guide to noise and vibration control on construction, demolition and maintenance sites.* SLR (2021) further advised that no "offensive noise", as defined in the POEO Act, will be created during the remediation works. On this basis, noise levels should not exceed those predicted and assessed in the EIS for the worst-case construction noise scenario, being site preparation/earthworks and road construction, where substantial noise generating equipment will be required.

The controls listed in the Summary of Commitments (see **Section 6**) will be implemented to minimise the potential for noise impacts during the short-term remediation works.

## 5.9 Visual Amenity

The remediation works themselves may generate minor short-term impacts on the existing landscape setting due to on-site plant and equipment, however given the lack of nearby receptors, any impacts would be very minor and consistent with those previously assessed and approved.

The completed remediation area will be capped to around 1.3 m high and grassed, with perimeter fencing and signage to secure the area. This will not increase the visibility or associated impacts of the approved poultry farm, and is consistent with what has been previously assessed and approved. The view locations surrounding the Development Site are significantly removed from the remediation area.

## 5.10 Social

The potential for adverse impacts on the social amenity of the area is primarily associated with those resulting from odour, dust, traffic, noise and visual impacts. In the context of the Development, social amenity (due to its location and land use characteristics) means the intrinsic value that residents place on the area, including rural character, peace and quiet, visual amenity and access to major facilities.

Based on the findings and conclusions of this Modification Report, the potential for adverse impact on social amenity as a result of the proposed modification is negligible. There will not be any change to the day-to-day life of surrounding residents and recreational land users as a result of the alternative remediation strategy and no additional demand for community infrastructure, facilities or services.

The remediation area is on land privately-owned by ProTen. There will not be any general public access and the remediation area will be secured with perimeter fencing and signage.

## 5.11 Economic

As outlined in **Section X**, the currently approved remediation strategy of excavation and off-site disposal is cost prohibitive and unfeasible, particularly when the proposed alternative strategy of on-site capping and containment is significantly less expensive and will achieve the same remediation goal. On this basis, the economic implication of the proposed modification is one of benefit for ProTen.

There will not be any economic implications as a result of the proposed modification on the surrounding landholders/residents or the wider community.

## 5.12 Cumulative

There are no identified cumulative impacts associated with the proposed modification.

# 6 UPDATED SUMMARY OF COMMITMENTS

Attached to Development Consent SSD 7704 as Appendix 2 is a consolidated summary of the development design, best management practices and mitigation measures committed to by ProTen to avoid, mitigate and/or manage the potential impacts of the Development (i.e. the Summary of Commitments).

The poultry farm development, as proposed to be modified, will be substantially the same development for which consent was originally granted under SSD 7704. The modification does not involve any changes to the construction, operation or management of the poultry farm itself. Consequently, the only changes to the Summary of Commitments are relatively minor additions and amendments. The Summary of Commitments appended to Development Consent SSD 7704 is reproduced below in **Table 7**, with the minor additions and alterations shown in blue.

**Table 7 Updated Summary of Commitments**

| **Development Construction** |
|---|
| • ProTen will implement all practicable measures to prevent or minimise any harm to the local environment and surrounding populace that may result from the construction of the Development.<br>• ProTen will construct the Development generally as described in the EIS and RTS and in accordance with detailed design completed following development consent, along with the necessary construction approvals (for example, construction certificates).<br>• A CEMP will be developed for approval prior to commencing construction. It will describe the activities to be undertaken on site during construction, outline construction staging and timing, nominate the roles and responsibilities for all relevant construction personnel, include community and stakeholder consultation requirements and include procedures for complaints and incident management. The CEMP will also specify the environmental management and mitigation measures to be implemented during construction in relation to:<br>– Surface water;<br>– Soils;<br>– Traffic;<br>– Biodiversity;<br>– Aboriginal heritage;<br>– Noise;<br>– Dust; and<br>– Waste.<br>• Construction workers will be suitably inducted and trained. Training in relation to environmental responsibilities will take place initially through the site induction and then on an on-going basis through toolbox talks (or similar). |
| **Development Operation** |
| • ProTen will implement all practicable measures to prevent or minimise any harm to the local environment and surrounding populace that may result from operation of the Development.<br>• The Development will generally be constructed, operated and managed in accordance with current industry best practice standards, including the relevant requirements/recommendations in the RSPCA Standards (RSPCA Australia 2013) and Best Practice Guidelines (DPI 2012).<br>• ProTen will operate the Development generally as described in this EIS and RTS.<br>• An OEMP will be developed for approval prior to commencing operation. It will describe the operational activities to be undertaken on site, nominate the roles and responsibilities for all relevant personnel, include community and stakeholder consultation requirements and include procedures for complaints and incident management. The OEMP will also include the following issue-specific management plans:<br>– Air Quality Management Plan;<br>– Surface Water Management Plan;<br>– Biodiversity Management Plan;<br>– Aboriginal Cultural Heritage Management Plan;<br>– Waste Management Plan;<br>– Landscaping Management Plan;<br>– Mass Mortality Disposal Strategy; and<br>– Pollution Incident Response Management Plan. |

It will also specify the environmental management and mitigation measures to be implemented in relation to traffic, noise, energy efficiency and pest control.

- The Development will not exceed a maximum population of 3,051,000 broiler birds, and the maximum number of birds placed on any given day will be 636,000 (±6%).
- Stocking densities will comply with the RSPCA Standards (2013) specification of 34 kg/$m^2$.
- Employees and contractors will be suitably inducted and trained. Training in relation to environmental responsibilities will take place initially through the site induction and then on an on-going basis through toolbox talks (or similar).
- The Development will be managed in compliance with ProTen's standard operating procedures, including a regular site inspection and maintenance program to minimise the potential for adverse environmental impacts, extend the life of equipment, reduce operating costs and maximise operational efficiency. Emphasis will be placed on keeping the insides of the poultry sheds and surrounding environs as clean as possible.

**Land Contamination**

- ~~The *Remedial Action Plan* (SLR 2019b) will be implemented prior to commencing construction to remediate arsenic impacted soil adjacent to the former sheep dip in Lot 165 DP 752169.~~
- The *Revised Remedial Action Plan* (SLR 2021) will be implemented and completed within 12 months of commencing construction to remediate arsenic impacted soil adjacent to the former sheep dip in Lot 165 DP 752169.
- A site validation report will be prepared in accordance with ~~*Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites* (OEH 2011)~~ *Contaminated Land Guidelines: Consultants Reporting on Contaminated Land (EPA 2020)* for submission to Council, EPA and DPIE within 30 days of completing the remediation works.
- An EMP will be prepared for the remedial area at the completion of the remediation and validation work. It will document the on-going management requirements for the remedial area and associated responsible parties.

**Drinking Water Supplies**

- Quality assurance programs will be prepared and implemented in accordance with the *NSW Health Private Water Supply Guidelines* (NSW Health 2014) for the drinking water supplies at the PPUs and farm managers' houses. These programs will be submitted to the HNELHD prior to commencing operation.

**Odour**

**Development Design**

- The poultry sheds will be tunnel-ventilated to allow control over internal moisture levels and promote optimum growing conditions and bird health.
- The poultry sheds will be fully enclosed, have wide eaves and will be surrounded by dwarf concrete bund walls to prevent stormwater entering the poultry sheds and elevated moisture levels.
- The poultry sheds will be fitted with nipple drinkers with drip cups to minimise water spillage and elevated moisture levels.
- The feed silos will be fully enclosed to prevent the entry of rainwater and elevated moisture levels.

**Shed Operations During Bird Growing Phase**

- The Development will not exceed a maximum population of 3,051,000 broiler birds.
- Stocking densities will comply with the RSPCA Standards (2013) specification of 34 kg/m2.
- Stocking densities and bird health will be regularly checked and, if necessary, appropriate corrective measures implemented.
- A minimum depth of 50 mm of fresh bedding material will be laid throughout the poultry sheds at the start of each batch.
- Bedding material moisture levels will be regularly checked. Any excessively wet material and/or caked material beneath drinking lines will be promptly identified, removed and replaced.
- Bird drinkers will be maintained to minimise/avoid leakage that will result in wet patches in the bedding material.
- The poultry shed ventilation systems will be maintained to ensure air movement is at design levels.
- Where possible, activities that may increase odour emissions (for example, bedding material replacement) will be undertaken during daytime hours.
- Shed access points will remain closed at all times other than for the purposes of allowing access to the sheds.
- Dead birds will be collected from the poultry sheds on a daily basis and stored in the on-site dead bird freezers prior to being removed from site.

**Shed Operations During Shed Cleanout**

- Poultry litter will be promptly removed from the poultry sheds and transported off site in covered trucks at the end of each production cycle.

- Where possible, litter handling will be avoided during adverse climatic conditions, such as times of cold air drainage during early morning or strong winds. The shed ventilation systems will not be used during little removal.
- Poultry litter will not be stockpiled or spread within the Development Site.

**Vegetation Screens**

- Vegetation screens will be established and maintained around the perimeter of each PPU on a progressive basis as soon as practicable following bulk earthworks and construction at each PPU.

**Weather Station**

- A weather station will be installed within the Development Site to collect on-going and up-to-date weather monitoring data, which will assist in investigating and responding to any air quality complaints.

**Particulate Matter**

**Construction**

- Surface disturbance will be limited to the smallest practicable area possible.
- Disturbed areas will be promptly rehabilitated and revegetated to a stable landform.
- When necessary, dust will be minimised by "wetting" down surfaces being worked and/or carrying traffic during dry conditions.
- Where possible, vehicles on site will be confined to designated roadways.
- Internal roads will be appropriately constructed and maintained with a suitably compacted base.
- Vehicles will not exceed a general speed limit of 60 km/hr along the internal access roads, with a reduced speed limit of 40 km/hr in the vicinity of work sites.
- Plant and equipment will be regularly maintained to ensure optimal operating condition.
- Loaded heavy vehicles entering or exiting the Development Site will have their loads covered.

**Development Design**

- The feed silos will be fully enclosed to minimise emissions of particulate matter when loading and unloading.
- The poultry sheds will be tunnel-ventilated, which will allow control over the moisture levels and promote optimum growing conditions and bird health. The increased airflow and improved feed conversion in tunnel-vented sheds helps to maintain bedding material within the optimal moisture range.

**Wheel Generated Dust From Unsealed Roadways**

- The two site access roads will be bitumen-sealed for a minimum of 50 m from Rushes Creek Road.
- Internal roads will be appropriately constructed and maintained with a suitably compacted base.
- When necessary, internal roads will be "wetted down" during dry conditions.
- Vehicles will not exceed a general speed limit of 60 km/hr along the internal access roads, with a reduced speed limit of 40 km/hr in the vicinity of the PPUs.
- Internal traffic will be restricted to the designated access roads (except in the event of an emergency or incident).

**Dust Emissions from Poultry Sheds**

- The bedding material will be managed to ensure that moisture levels do not drop below approximately 15%.
- The poultry shed ventilation systems will be maintained to ensure air movement is at design levels.
- The poultry sheds will be thoroughly cleaned between batches, with a focus on the fan end of the sheds.

**Emergency Standby Diesel Generators**

- The generators will be contained in lockable acoustics enclosures with vertical air discharge and will only be used in emergency situations when mains power from the electricity grid is lost.
- The generators will meet the relevant emission standards in Schedule 4 of the Clean Air Regulation.

**Materials Handling and Transfer**

- When possible, handling bedding material/poultry litter will be limited to daytime hours to avoid adverse weather conditions.
- Poultry litter will be promptly transported off site in covered trucks at the end of each batch.

**Vegetation Screens**

- Vegetation screens will be established and maintained around the perimeter of each PPU on a progressive basis as soon as practicable following bulk earthworks and construction at each PPU.

**Weather Station**

- A weather station will be installed within the Development Site to collect on-going and up-to-date weather monitoring data, which will assist in investigating and responding to any air quality complaints.

**Traffic**

**Construction**

- A CTMP will be prepared for approval prior to commencing construction.
- The generic traffic control plan will be implemented if the construction of the new site access driveways off Rushes Creek Road and/or the installation of water and electricity supply lines under Ski Gardens Road results in the need to restrict the two-way traffic arrangement on the respective roads to a single lane.
- Construction vehicles will enter and exit the Development Site during the initial site preparation works via the existing site access driveways off Rushes Creek Road and subsequently via the two new access driveways to be constructed off Rushes Creek Road at the commencement of construction.
- Vehicles will not exceed a general speed limit of 60 km/hr along the main site access roads from Rushes Creek Road, with a reduced speed limit of 40 km/hr in the vicinity of all work sites.
- All construction-related traffic and construction plant/equipment will park along the internal access roads and/or on construction sites. There will be no queuing or parking on Rushes Creek Road.
- Where possible, vehicles on site will be confined to designated roadways.
- Suitable signage will be erected indicating internal traffic direction and speed limits to ensure the orderly and safe use of the site, as well as to minimise the potential for traffic conflict.
- Internal roads will be maintained clear of obstruction and used exclusively for the purposes of transport, loading-unloading and parking.
- Loaded heavy vehicles entering or exiting the Development Site will have their loads covered.
- Heavy vehicles exiting the Development Site will be cleaned of dirt, sand and other materials (if necessary) to avoid tracking these materials on to the public road network.
- The only traffic to enter the Development Site will be construction traffic and, if required, emergency vehicles. There will not be any general public access.
- All heavy vehicle drivers will read and sign a Driver Code of Conduct that will include, but not be limited to, the following:
  - A map of the primary transport route(s) highlighting critical locations;
  - Safety initiatives for transport through residential areas and/or school zones;
  - A driver induction process and regular toolbox talks (or similar);
  - A complaints resolution and disciplinary procedure;
  - A directive to drivers to slow down and provide right-of-way to any livestock and/or farm machinery on the transport routes; and
  - A directive to drivers to avoid the use of compression braking along Rushes Creek Road.

**Oxley Highway / Rushes Creek Road Intersection**

- Visibility splays at the Oxley Highway / Rushes Creek Road intersection will be checked in both the horizontal and vertical planes via detailed field investigation or survey to confirm, in particular, whether there is a need for any vegetation trimming/clearing on the inside of the horizontal curve immediately to the west of the intersection to ensure SISD.
- A review of the line-marking arrangement on Rushes Creek Road at the Oxley Highway intersection will be undertaken to ensure it is consistent with the Give-Way intersection control.
- Additional signage will be erected at the Oxley Highway / Rushes Creek Road intersection in the form of advance signposting in both directions to warn of trucks turning at the intersection.

**Development Design**

- The two new access driveways from Rushes Creek Road will be constructed to accommodate a BAL treatment in accordance with AGRD Part 4A (Austroads 2017). Directional signage will be installed on Rushes Creek Road to assist approaching traffic identify the access points and access control (Give Way) signage and line-marking will be provided to control vehicles exiting the Development Site.
- The two new access roads will be bitumen-sealed for a minimum of 50 m from Rushes Creek Road and will be approximately 6.5 m wide. The remaining lengths of the internal access roads within the Development Site will be constructed as all-weather rural-type roads to meet the minimum requirements of AS 2890.2 Part 2 to accommodate the turning movements of B-doubles.
- Signage will be installed on the two access driveways near their intersections with Rushes Creek Road instructing heavy vehicle drivers to avoid the use of compression braking within the Development Site and on Rushes Creek Road.
- A one-way circulation road (ring road) will be established around the perimeter of each PPU to enable traffic to enter, exit and manoeuvre for loading-unloading and servicing activities in a forward direction.

**Operation**

- Traffic will enter and exit the Development Site via the two new access driveways off Rushes Creek Road.
- Heavy vehicles travelling between the Development Site and the poultry industry service facilities located in and around Tamworth will utilise the nominated heavy vehicle route (approved B-double route) comprising the Oxley Highway and Rushes Creek Road (see Figure 19).
- Vehicles will not exceed a general speed limit of 60 km/hr along the internal access roads, with a reduced speed limit of 40 km/hr in the vicinity of the PPUs.
- Suitable signage will be erected indicating internal traffic direction and speed limits to ensure the orderly and safe use of the site, as well as to minimise the potential for traffic conflict.
- Internal roads will be appropriately maintained to provide safe driving conditions (and also minimise noise and dust emissions).
- Internal roads will be maintained clear of obstruction and used exclusively for the purposes of transport, loading-unloading and parking.
- Internal traffic will be restricted to the designated access roads (except in the event of an emergency or incident).
- Car parking will be provided adjacent to the amenities facility at each PPU for employees and visitors, and adequate area will be available at each PPU and along internal access roads for any heavy vehicle parking requirements. There will be no parking along Rushes Creek Road.
- All heavy vehicle drivers will read and sign a Driver Code of Conduct that will include, but not be limited to, the following:
  - A map of the primary transport route(s) highlighting critical locations;
  - Safety initiatives for transport through residential areas and/or school zones;
  - A driver induction process and regular toolbox talks (or similar);
  - A complaints resolution and disciplinary procedure;
  - A directive to drivers to slow down and provide right-of-way to any livestock and/or farm machinery on the transport routes; and
  - A directive to drivers to avoid the use of compression braking along Rushes Creek Road.
- Consultation will be undertaken with Council and the local traffic committee in relation to installing signage on Rushes Creek Road near the Development Site and near the Oxley Highway intersection instructing heavy vehicle drivers to avoid compression braking along Rushes Creek Road.

**Surface Water**

**Construction**

- Construction works will be planned and coordinated in order to limit the area of disturbance at any one time (as far as practicable).
- Erosion and sediment controls will be implemented prior to disturbance activities commencing in accordance with the Blue Book (Landcom 2004) and *Erosion and Sediment Control on Unsealed Roads* (OEH 2012).
- Clean water diversions comprising a deflection bank and swale drain will be installed around the upstream sides of each of the four PPUs to convey clean water run-off around the construction sites. They will be constructed and stabilised prior to earthworks commencing at each PPU and will be designed to convey the runoff from the upstream catchment for rainfall events up to the 1% AEP event.
- Stripped topsoil will be appropriately stockpiled and managed for use in future rehabilitation works.
- Disturbed areas will be promptly rehabilitated and revegetated to a stable landform following completion of disturbance activities (see Section 4.3.6 in the EIS).
- An on-going inspection and maintenance program will be implemented to ensure the continued integrity of the erosion and sediment control structures throughout the construction period. They will be visually inspected on a monthly basis and following significant rainfall events and any required maintenance work will be promptly undertaken.

**Development Design and Operation**

- The poultry sheds will be fully enclosed and surrounded by a dwarf concrete bund wall to prevent stormwater entering the sheds and allow for the controlled discharge of wash down water from the sheds.
- The clean water diversions (comprising a deflection bank and swale drain) installed prior to earthworks around the upstream sides of each of the four PPUs will be maintained to convey clean water run-off around the PPUs and prevent this water from entering the controlled surface water management system. The diversions will be designed and maintained to convey the runoff from the upstream catchment for rainfall events up to the 1% AEP event.
- Engineered surface water management systems will be installed at each PPU to capture and manage wash down water and stormwater runoff within the PPU environs, providing long-term structural management controls throughout the life of the operation. Each system will be designed to capture the runoff from 200 mm of rainfall, which is equivalent to the depth of rainfall for a 1% AEP 72-hour event.

- AWTSs will be installed to manage the sewage generated by the staff amenities at each PPU and the farm managers' houses in accordance with the manufacturer's specifications and Council approval requirements. Each AWTS (12 in total) will have a treatment capacity of 10 equivalent persons at 200 L/p/d and the treated effluent will be released over an area of approximately 200 m2 via sub-surface irrigation.
- The extraction of surface water from the Namoi River to service the Development's water supply requirements will be under the provisions of the two existing water access licences held by ProTen (WAL41834 and WAL37794). Extraction will not exceed the combined licensed allocation of 437.2 units per year under the provisions of the *Water Sharing Plan for the Upper Namoi and Lower Namoi Regulated River Water Sources 2016*.
- An on-going inspection and maintenance program will be implemented to ensure the continued integrity of the surface water management systems, including upstream diversions. They will be visually inspected on a monthly basis and following significant rainfall events and any required maintenance work will be promptly undertaken to ensure the system's design capacity is maintained.
- The detention dams at each PPU will be visually inspected on an annual basis and, if necessary, will be desilted to ensure the dams maintain their design capacity.
- The grassed swale drains between the poultry sheds will be carefully managed to minimise soil disturbance and maximise infiltration and stormwater treatment potential. They will be regularly slashed to encourage continual grass growth and associated nutrient up-take.
- Dry-cleaning practices at the end of each production cycle will be maximised within the poultry sheds prior to washing with water to minimise the volume of wash water and the amount of poultry litter (and associated sediments and nutrients) in the wash down water.
- Water captured in the detention dams will be reused for regular irrigation of the planted vegetation screens at each PPU. Advice with be sought from an appropriate professional to ensure that the tree and shrub species selected for the vegetation screens can effectively cope with and utilise the anticipated nutrient loads within the irrigation water.
- The waste management systems listed in Section 4.18 of the EIS will be implemented to ensure that each waste stream generated is effectively managed and disposed of off site. There will not be any on-site stockpiling or disposal of waste.
- The best management practices and mitigation measures outlined in Section 4.19 of the EIS will be implemented for the storage of chemicals and fuels.

**Mosquito Control**

- The table drains and detention dams will be maintained free of vegetation.
- The vegetation screens around the PPUs will not be over-irrigated to avoid water collecting in any depressions for long periods of time.
- If it is identified that mosquitos have become an issue, a larvicide will be applied to the detention dams and surrounds to prevent mosquitoes from maturing to adults and/or the detention dams and surrounds will be fogged.

**Groundwater**

- There will not be any groundwater extraction or use by the Development.
- Each poultry shed will be fully enclosed and have concrete flooring.
- Each poultry shed will be surrounded by a dwarf concrete bund wall measuring 400 mm high to prevent rainwater and runoff entering the sheds and to allow for the controlled discharge of wash down water from the sheds.
- Engineered surface water management systems will be installed at each PPU to capture and manage wash down water and stormwater runoff within the PPU environs, providing long-term structural management controls throughout the life of the operation. Each system will be designed to capture the runoff from 200 mm of rainfall, which is equivalent to the depth of rainfall for a 1% AEP 72-hour event.
- The internal surfaces of the detention dams will be compacted or lined to provide an impermeable surface.
- AWTSs will be installed to manage the sewage generated by the staff amenities at each PPU and the farm managers' houses in accordance with the manufacturer's specifications and Council approval requirements. Each AWTS (12 in total) will have a treatment capacity of 10 equivalent persons at 200 L/p/d and the treated effluent will be released over an area of approximately 200 m2 via sub-surface irrigation.
- An on-going inspection and maintenance program will be implemented to ensure the continued integrity of the surface water management systems. They will be visually inspected on a monthly basis and following significant rainfall events and any required maintenance work will be promptly undertaken to ensure the system's design capacity is maintained.
- The grassed swale drains between the poultry sheds will be carefully managed to minimise soil disturbance and maximise infiltration and stormwater treatment potential. They will be regularly slashed to encourage continual grass growth and associated nutrient up-take.
- Dry-cleaning practices at the end of each production cycle will be maximised within the poultry sheds prior to washing with water to minimise the volume of wash water and the amount of poultry litter (and associated sediments and nutrients) in the wash down water.

- The waste management systems listed in Section 4.18 of the EIS will be implemented to ensure that each waste stream generated is effectively managed and disposed of off site. There will not be any on-site stockpiling or disposal of waste.
- The best management practices and mitigation measures outlined in Section 4.19 of the EIS will be implemented for the storage of chemicals and fuels.

**Biodiversity**

**Construction**

- Construction areas will be clearly delineated to ensure no native vegetation outside of these areas is cleared.
- Erosion and sediment controls will be implemented prior to disturbance activities commencing in accordance with the Blue Book (Landcom 2004) and *Erosion and Sediment Control on Unsealed Roads* (OEH 2012).
- An on-going inspection and maintenance program will be implemented to ensure the continued integrity of the erosion and sediment control structures throughout the construction period. They will be visually inspected on a monthly basis and following significant rainfall events and any required maintenance work will be promptly undertaken.
- Vehicles will not exceed a general speed limit of 60 km/hr along the main site access roads from Rushes Creek Road, with a reduced speed limit of 40 km/hr in the vicinity of work sites.
- If considered necessary, vehicles leaving the Development Site will be cleaned to avoid the spread of weeds.
- WIRES will be contacted prior to planned tree felling to advise of proposed works and arrange a volunteer wildlife handler (if required and available) to rescue any fauna.
- Rubbish, including building material wastes and food scraps, will be properly managed and will not be stockpiled within areas of native vegetation.
- Disturbed areas will be promptly rehabilitated and revegetated to a stable landform following completion of disturbance activities (see Section 4.3.6 in the EIS).
- Revegetation works and landscape plantings will be regularly inspected and assessed for maintenance requirements, including weed control.

**Operation**

- Engineered surface water management systems will be installed at each PPU to capture and manage wash down water and stormwater runoff within the PPU environs, providing long-term structural management controls throughout the life of the operation.
- If any native fauna are by chance injured during operations, WIRES will be contacted to arrange proper care for the animal. WIRES will also be contacted to remove any bats discovered within the poultry sheds.
- Suitable signage will be erected to direct traffic, limit traffic speed and minimise night time noise levels.
- Vehicles will not exceed a general speed limit of 60 km/hr along the internal access roads, with a reduced speed limit of 40 km/hr in the vicinity of the PPUs.
- Internal traffic will be restricted to the designated access roads (except in the event of an emergency or incident).
- Efforts will be made to ensure the poultry sheds and other site buildings are fully enclosed and maintained in an attempt to exclude bats from roosting within the sheds/buildings.
- The waste management systems listed in Section 4.18 in the EIS will be implemented to ensure that each waste stream generated is effectively managed and disposed of off site. There will not be any on-site stockpiling or disposal of waste.
- External lighting will be aimed downwards and only used when necessary during times of low light and/or heavy fog.
- A wheel wash facility will be installed on the access road to each PPU in order to minimise the risk of spread of plant pathogens and weeds.
- Pest control measures (see Section 4.21 in the EIS) will be implemented to prevent and control outbreaks.

**Biodiversity Offset Strategy**

- The Biodiversity Offset Strategy outlined in Section 8.6.5 of the EIS will be implemented to fulfil the offset requirements for the Development.
- The biodiversity offsetting actions and outcomes will be documented in an addendum to the Biodiversity Offset Strategy for submission to the DPE and OEH within 12 months of obtaining development consent.

**Aboriginal Heritage**

**Aboriginal Cultural Heritage Management Plan**

- Prior to the commencement of construction, an ACHMP will be prepared for approval in consultation with the RAPs and OEH. It will describe the management actions for all Aboriginal sites within the Development Site, including the seven sites within the disturbance footprint, and include an unexpected finds protocol.

**Archaeological Salvage and Fencing**

- The seven Aboriginal sites within the disturbance footprint of the Development, being Happy Hills-IF3, Bondah-IF1, Bondah-IF2, Bondah-IF7, Bondah-IF8, Happy Hills-OS3 and Bondah-OS11, will be salvaged by a surface collection and recording of all visible surface artefacts in consultation with the RAPs and OEH. The salvage works will be detailed in the ACHMP and will include the mapping, analysis and collection of all surface artefacts at the seven sites. The results of the salvage will be included in a report to preserve the data in a useable form.
- The five Aboriginal sites in close proximity to the disturbance footprint of the Development will be fenced with appropriate buffers and signed. Specifically:
- Happy Hills-IF4 is located within 50 m of an access road – it will be permanently fenced with a 10 m buffer and signed "Do Not Enter";
- Bondah-IF5 is located within 30 m of an access road – it will be permanently fenced with a 10 m buffer and signed "Do Not Enter";
- Bondah-OS2 is located within 50 m of water and electricity supply lines – it will be fenced with a 10 m buffer and signed "Do Not Enter" during construction;
- Bondah-OS3 is located within 60 m of water and electricity supply lines – it will be fenced with a 10 m buffer along its eastern extents and signed "Do Not Enter" during construction; and
- Bondah-OS9 is located within 20 m of water and electricity supply lines – it will be permanently fenced with a 10 m buffer around its northern extent and signed "Do Not Enter".

**Archaeological Excavation of Bondah-H1**

- Consultation with the RAPs will be undertaken to determine the cultural appropriateness of excavating the Aboriginal hearth identified as Bondah-H1 during the preparation of the ACHMP. If the RAPs confirm the appropriateness and potential benefits, archaeological excavation of Bondah-H1 to determine if it is an Aboriginal oven will be included in the ACHMP. The excavation will also be used to determine whether in-situ charcoal remains beneath the cluster of stones for radio carbon C14 dating.

**General**

- No disturbance will occur outside of the disturbance footprint assessed in this EIS. Any alterations to the Development footprint will be assessed in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW 2010).
- The three Aboriginal scarred trees identified within the Development Site will be further examined with reference to the *Aboriginal Scarred Trees in New South Wales, A Field Manual* (DEC 2005) should the Development's disturbance footprint change in a manner that potentially threatens these trees.
- Employees and contractors will be made aware of the presence of the identified Aboriginal sites during site inductions and training.
- If any Aboriginal sites are uncovered during construction or operation, all work within the vicinity will cease immediately and the unexpected finds protocol in the approved ACHMP will be followed.

**Noise**

**Construction**

- Construction activities will be restricted to the following standard daytime hours:
  - Monday to Friday – 7:00 am to 6:00 pm;
  - Saturday – 8:00 am to 1:00 pm; and
  - No audible construction work on Sundays or public holidays.
- Plant and equipment operators will be instructed on how to minimise noise generation at all times. If necessary, this may include avoiding the operation of noisy plant and equipment simultaneously.
- Plant and equipment will be maintained to meet regulatory and industry standards, as well as ensure optimal operating conditions.

**Operation**

- Noise generating equipment purchased by the operator will comply with relevant workplace health and safety requirements.
- Plant and equipment will be maintained to meet regulatory and industry standards and ensure optimal operating conditions.
- A unidirectional traffic movement system, via a one-way circulation road around each PPU, will be established to minimise the use of reversing beepers.
- Internal roads will be appropriately constructed and maintained with a suitably compacted base.
- Vehicles will not exceed a general speed limit of 60 km/hr along the internal access roads, with a reduced speed limit of 40 km/hour in the vicinity of the PPUs.
- Suitable signage will be erected to direct traffic, limit traffic speed and minimise night time noise levels.

- The emergency standby diesel generators will be contained in lockable acoustics enclosures with vertical air discharge and will only be used in emergency situations when mains power from the electricity grid is lost.

**Road Traffic**

- A directive to heavy vehicle drivers will be included in the Driver Code of Conduct to avoid the use of compression braking along Rushes Creek Road.
- Signage will be installed on the two access driveways near their intersections with Rushes Creek Road within the Development Site instructing heavy vehicle drivers to avoid the use of compression braking within the Development Site and on Rushes Creek Road.
- Consultation will be undertaken with Council and the local traffic committee in relation to installing signage on Rushes Creek Road near the Development Site and near the Oxley Highway intersection instructing heavy vehicle drivers to avoid compression braking along Rushes Creek Road.

**Hazard and Risk**

- Diesel and petrol will be stored in aboveground bunded tanks, with the minimum bund volumes being 110% of the respective tank capacity.
- LPG will be stored in aboveground tanks installed and maintained in compliance with *AS/NZS 1596:2014 The Storage and Handling of LP Gas*. Minimum separation distances will be maintained.
- Chemicals will be stored in the vented chemical store within the amenities and workshop building at each PPU.
- Copies of the SDSs for each chemical and fuel will be kept within the chemical store and/or office at each PPU.
- Spill kits will also be maintained within the chemical store at each PPU.
- Diesel, petrol and LPG storages will be separated from each other and separated from the chemical store in the amenities and workshop building at each PPU.
- The chemical and fuel storage bunding will be constructed of material sufficiently impervious to the stored chemicals/fuel and be able to prevent the migration of any spillage or leakage to the surrounding environment. Where relevant, the bunding will comply with the relevant requirements of the following Australian Standards and will be approved by a structural engineer:
  - *AS/NZS 1596:2014 The Storage and Handling of LP Gas*, where applicable to the proposed LPG storage tanks;
  - *AS 1940:2017 The Storage and Handling of Flammable and Combustible Liquids*, where applicable to the proposed petrol and diesel storage tanks;
  - *AS 2507:1998 The Storage and Handling of Agricultural and Veterinary Chemicals*, where applicable to the proposed storage of chemicals comprising ADG Classes 3, 6.1, 8 and 9 and non-dangerous goods; and
  - *AS 3780:2008 The Storage and Handling of Corrosive Substances*, where applicable to the proposed storage of chemicals comprising ADG Class 8 substances.
- The following controls will be implemented in relation to LPG storage to reduce risks to an acceptable level -
  - Installations will comply with AS/NZS 1596:2014, specifically sections 3, 5, 6, 8, 11, 12 and 13;
  - Tanks will be made of steel and comply with the requirements AS/NZS 1200;
  - Tank filling will comply with section 6.6 of AS/NZS 1596:2014;
  - Tanks will have an automatic fill shutoff when they have reached capacity in accordance with section 6.6 of AS/NZS 1596:2014;
  - Outflow will be controlled in accordance with section 5 of AS/NZS 1596:2014;
  - Appropriate compliant safety shut down and isolation valves will be installed as per sections 5.3 and 6.7 of AS/NZS 1596:2014;
  - Inspections, testing and maintenance will be undertaken is in accordance with section 11.5 of AS/NZS 1596:2014;
  - Separation distances will be maintained as per AS/NZS 1596:2014;
  - Hazard area classification will be in accordance with AS/NZS 60079.10.1:2009;
  - Electrical equipment will comply with AS3000;
  - Fire safety systems will be installed and/or available in accordance with section 13 of AS/NZS 1596:2014;
  - Fire-sensing elements of the emergency shutdown system will be located in a position to sense a fire at the filling/loading connection; and
  - Staff will be trained in how to use firefighting equipment and fire drills should be undertaken.
- If considered necessary, a Fire Safety Study will be undertaken following development consent, in parallel with development detailed design, for approval prior to commencing construction.

**Visual Amenity**

**Development Design**

- The poultry sheds, along with some other infrastructure items, will be constructed using non-reflective materials. The walls will be a eucalyptus green (or similar) colour sympathetic with the surrounding natural environment.
- The solar panels will have anti-reflective treatment and there will not be any mirrors or lenses used.

- External lighting will comprise individual light fixtures mounted at a height of approximately 4 m over the front and rear of each poultry shed, with no broad area or flood lighting.

**Vegetation Screens**

- Vegetation screens will be established and maintained around the perimeter of each PPU on a progressive basis as soon as practicable following bulk earthworks and construction at each PPU.
- Advice with be sought from an appropriate professional to ensure that the tree and shrub species selected for the vegetation screens can effectively cope with and utilise the anticipated nutrient loads within the irrigation water.

**Operation**

- External lighting will be aimed downwards and only used when necessary during times of low light and/or heavy fog.

**Greenhouse Gas and Energy Efficiency**

**Development Design**

- The poultry sheds will be insulted with high thermal performing expanded polystyrene with fire-retardant.
- The poultry sheds will be tunnel-ventilated, fully-enclosed and climate-controlled, which will reduce power consumption.
- Solar panels will be installed at each PPU to generate clean renewable energy to power the PPUs and reduce dependency on reticulated electricity. The panels will produce energy during the day and any surplus energy will be able to be fed into the electricity grid.
- Low lux lighting will be installed within the poultry sheds.

**Operation**

- External lighting will only be used when necessary during times of low light and/or heavy fog.
- The integrity of the poultry sheds will be regularly checked to identify and rectify any air leaks, which place additional load on ventilation fans.
- Internal lighting, temperature, humidity and static pressure will be continuously monitored within the poultry sheds and automatically adjusted to suit conditions. This will avoid unnecessary solar, electricity and LPG usage.
- Equipment such as ventilation fans and heaters will be regularly maintained and serviced to ensure optimal performance and efficiency.

**Social**

- Shortly following submission of this EIS to the DPE for public exhibition, ProTen will hold a community information session. This session will serve to overview the Development, outline and discuss the findings of key impact assessments and provide an overview of the EIS assessment and determination process, including how to review and comment on the EIS during the exhibition phase.
- ProTen will hold subsequent face-to-face meetings if requested by any of the community stakeholders.
- ProTen will arrange additional community information sessions prior to commencing both construction and operation if desired by the community stakeholders.
- Community and stakeholder consultation commitments will be included in both the CEMP and OEMP, which will be publicly available on ProTen's website once approved.
- Prior to the commencing both construction and operation ProTen will inform the surrounding residents and operators of the surrounding recreational facilities of planned commencement of construction/operation via a letter drop. The letter will advise relevant details, including general construction/operation activities, key dates, staging and hours, and relevant site contact details. These stakeholders will also be informed of any changes to the construction/operation activities in writing.
- Clearly visible signage will be installed at both the site access driveways off Rushes Creek Road prior to commencing construction and during operation. The signs will advise relevant details, including the site name, site office location, site contact details and any specific access requirements.
- ProTen will continue to operate its freecall environmental hotline number, which is provided on the company's website, to ensure community concerns can be raised and addressed.
- ProTen will work with the Lake Keepit Soaring Club following development consent to establish an emergency landing strip for gliders within the Development Site.
- ProTen will be levied and pay development contributions to Council pursuant to the EP&A Act and in accordance with the *Tamworth Regional Council Section 94A (Indirect) Development Contributions Plan 2013*.

# 7 JUSTIFICATION AND CONCLUSION

This Modification Report has been prepared to accompany an application by ProTen seeking to modify Development Consent SSD 7704 for the Rushes Creek Poultry Production Farm, under section 4.55(1A) of the EP&A Act, to allow an alternative remediation strategy and remediation timing for an area of arsenic impacted soil outside of the development disturbance footprint.

The currently approved remediation strategy in the 2019 RAP, which comprises excavation and off-site disposal of the contaminated soil, is now the least fiscally viable option given that the landfill at Kemps Creek on the western fringes of Sydney has been identified as the only landfill licensed in NSW to accept the arsenic impacted soil. Due to the Development Site's remote location and distance to Kemps Creek, along with the significant landfill gate fees, this option is cost prohibitive and unfeasible, particularly when the alternative remediation strategy of on-site capping and containment is significant less expensive and will achieve the same remediation goal.

Furthermore, transport and disposal of the contaminated soil to landfill is less preferable from an environmental perspective. The WARR Act aims (among other things) to divert waste from landfill and encourage the prioritisation of waste management through a waste hierarchy. The proposed modification supports the waste hierarchy by avoiding the need to dispose of the arsenic contaminated soils to landfill, which will also:

- Avoid the environmental impacts and risks associated with excavating and transporting the contaminated soil close to 500 km via the public road network; and
- Reduce the demand for scarce landfill airspace.

The proposed modification has been assessed in this Modification Report in accordance with the context of the relevant environmental legislation and planning instruments, and the following is concluded:

- The soils within the remediation area can be made suitable for the Development subject to implementation of the Revised RAP (SLR 2021), preparation of a site validation report, and development and implementation of an EMP for the on-going management of the remedial area.
- The poultry farm development, as proposed to be modified, will be substantially the same development for which consent was originally granted under SSD 7704. The modification does not involve any changes to the construction, operation or management of the poultry farm itself, with the primary use and core characteristics of the approved Development remaining the same.
- The proposed modification poses negligible environmental impacts over and above what has already been assessed and approved.
- A modification under section 4.55(1A) of the EP&A Act appears to be a suitable and lawful approval pathway for the proposal.

ProTen will implement the environmental controls listed in the updated Summary of Commitments in **Section 6** to avoid, mitigate and/or manage the potential impacts of the Development.

The proposed modification is justified on environmental, social and economic grounds and it is consistent with the key objects of the EP&A Act. It will support the orderly and economic use and development of land for the approved poultry farm, while at the same time protecting and managing valuable environmental and cultural resources.

# 8 REFERENCES

Australian Bureau of Statistics website – 2016 Census QuickStats - https://www.abs.gov.au/websitedbs/D3310114.nsf/Home/2016%20QuickStats

Department of Primary Industries (2012) *Best Practice Management for Meat Chicken Production in NSW*

EME Advisory (2019a) *Rushes Creek Poultry Production Farm, SSD 7704, Response to Submissions*

EME Advisory (2019b) *Rushes Creek Poultry Production Farm, SSD 7704, Supplementary Response to Submissions*

Environment Protection Authority (EPA) *Contaminated Land Guidelines: Consultants Reporting on Contaminated Land*

Landcom (2004) *Managing Urban Stormwater: Soils and Construction Volume 1*

National Environmental Protection Council (2013) *National Environmental Protection (Assessment of Site Contamination) Measure*

Office of Environment and Heritage (2011) *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Site*

Office of Environment and Heritage (2012) *Erosion and Sediment Control on Unsealed Roads*

RSPCA Australia (2013) *RSPCA Approved Farming Scheme Standards – Meat Chickens*

Safe Work Australia (2016) *Code of Practice Demolition Work*

SLR Consulting Australia (2017) *Rushes Creek Groundwater Bore Baseline Assessment*

SLR Consulting Australia (2018a) *Rushes Creek Poultry Production Farm, SSD 7704, Environmental Impact Statement*

SLR Consulting Australia (2018b) *Stage 1 Preliminary Site Investigation, Proposed Poultry Production Farm, Rushes Creek Road, Rushes Creek, NSW*

SLR Consulting Australia (2019a) *Detailed Site Investigation, Proposed Poultry Production Farm, Rushes Creek Road, Rushes Creek, NSW*

SLR Consulting Australia (2019b) *Remedial Action Plan, Proposed Poultry Production Farm, Rushes Creek Road, Rushes Creek, NSW*

SLR Consulting Australia (2021) *Revised Remedial Action Plan, Proposed Poultry Production Farm, Rushes Creek Road, Rushes Creek, NSW*

Standards Australia (2001) *AS2601-2001 The Demolition of Structures*

Standards Australia (2010) *AS 2436-2010 Guide to noise and vibration control on construction, demolition and maintenance sites.*

# 9 ABBREVIATIONS

| | |
|---|---|
| ABS | Australian Bureau of Statistics |
| AEC | area of environmental concern |
| ASC NEPM | *National Environmental Protection (Assessment of Site Contamination) Measure* |
| CLM Act | *Contaminated Land Management Act 1997* |
| Council | Tamworth Regional Council |
| DP | Deposited Plan |
| DPIE | Department of Planning, Industry and Environment |
| DSI | Detailed Site Investigation |
| EIS | Environmental Impact Statement |
| EME | EME Advisory |
| EMP | Environmental Management Plan |
| EPA | Environment Protection Authority |
| EPBC Act | *Environment Protection and Biodiversity Conservation Act 1999* |
| EPL | Environment Protection Licence |
| EP&A Act | *Environmental Planning and Assessment Act 1979* |
| HIL-A | soil health investigation level - residential land use, with garden/accessible soil |
| kg/m$^2$ | kilograms per square metre |
| km | kilometre |
| km/hr | kilometres per hour |
| LEP | Local Environmental Plan |
| LGA | local government area |
| m | metre |
| m$^2$ | square metre |
| mbgl | metres below ground level |
| NSW | New South Wales |
| OEH | Office of Environment and Heritage |
| POEO Act | *Protection of the Environment Operations Act 1997* |
| PPU | poultry production unit |
| ProTen | ProTen Tamworth Pty Limited |
| PSI | Preliminary Site Investigation |
| RAC | remedial action criteria |
| RAP | Remedial Action Plan |
| RTS | Response to Submissions |
| SEPP 55 | *State Environmental Planning Policy No. 55 - Remediation of Land* |
| SLR | SLR Consulting Australia Pty Ltd |
| SSD | State significant development |
| Tamworth LEP | *Tamworth Regional Local Environmental Plan 2010* |
| VENM | virgin excavated natural material |
| WARR Act | *Waste Avoidance and Resource Recovery Act 2001* |

# Appendix A

## Revised Remedial Action Plan

### (SLR Consulting Australia)



# REVISED REMEDIAL ACTION PLAN

**Proposed Poultry Production Farm**
**Rushes Creek Road, Rushes Creek, NSW**

**Prepared for:**

ProTen Tamworth Pty Ltd
PO Box 1746
North Sydney, NSW 2060

**SLR Ref: 610.30237.00000-R01**
**Version No: -v2.1**
**April 2021**

# PREPARED BY

SLR Consulting Australia Pty Ltd
ABN 29 001 584 612
Tenancy 202 Submarine School, Sub Base Platypus, 120 High Street
North Sydney NSW 2060 Australia

T: +61 2 9427 8100
E: sydney@slrconsulting.com www.slrconsulting.com

# BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with ProTen Tamworth Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

# DOCUMENT CONTROL

| Reference | Date | Prepared | Checked | Authorised |
|---|---|---|---|---|
| 610.30237.00000-R01-v2.1 | 22 April 2021 | Jason Roesler | James Elliot | Hugh Selby |
| 610.30237.00000-R01-v2.0 | 12 April 2021 | Jason Roesler | James Elliot | Hugh Selby |

# EXECUTIVE SUMMARY

SLR Consulting Pty Ltd (SLR) was engaged by ProTen Tamworth Pty Limited (ProTen) to review and revise the Remedial Action Plan (RAP) previously approved for the proposed poultry production farm located at Rushes Creek Road, Rushes Creek, NSW (the site). The proposed remedial area within the site is currently vacant and is located beside an old abandoned sheep holding shed. The remedial area covers approximately 700 $m^2$, occupying a small portion of Lot 165 of Deposited Plan (DP) 752169.

Development on the site is proposed to include four individual poultry farms, eight new residential houses, and various other support/servicing infrastructure items. This development was granted Development Consent SSD 7704 by the Department of Planning Industry and Environment (DPIE) (as delegate for the Minister) on 16 April 2020.

This revised RAP has been developed based upon data acquired and recommendations made in SLR's Detailed Site Investigation (DSI) prepared for the site which identified arsenic contamination above applicable human health screening/investigation levels adjacent to a former sheep dip, along with further consideration and consultation with the Environment Protection Authority (EPA) regarding an alternative preferred remediation approach to what was originally proposed and approved.

The primary remedial goal for this site is to remediate the identified arsenic impacted soil to a level that does not present an unacceptable human health exposure risk and to render the site suitable for the proposed land use. Therefore, the key objectives of the revised RAP are to effectively remediate arsenic impacted soil to HIL-A (ie. standard residential with garden/accessible soil) and to ensure remedial works will generally comply with the NSW EPA 2017 *Guidelines for the NSW Site Auditor Scheme*.

Following a review of feasible remedial options for the site and the agreement with the client, the alternative preferred remedial strategy is to cap and contain the arsenic contaminated soil.

Based on a statistical analysis of analytical results from the DSI (SLR 2019), it is estimated that an area of approximately 700$m^2$ will require capping to attain the remedial objective.

Based on the information available in the contamination assessment reports, SLR considers that soils on the site can be made suitable for the proposed land use, subject to implementation of the measures outlined in this revised RAP.

# CONTENTS

# CONTENTS

# CONTENTS

# CONTENTS

# DOCUMENT REFERENCES

## TABLES



## APPENDICES

# 1 Introduction

SLR Consulting Pty Ltd (SLR) was engaged by ProTen Tamworth Pty Limited (ProTen) to review and revise the Remedial Action Plan (RAP) previously approved for soil impacted by arsenic near a former sheep dip at the proposed poultry production farm located at Rushes Creek Road, Rushes Creek, NSW (the site). The Rushes creek Poultry Production Farm was granted Development Consent SSD 7704 by the Department of Planning Industry and Environment (DPIE) (as delegate for the Minister) on 16 April 2020.

The site is bounded by Rushes Creek Road to the east and Ski Gardens Road to the north. The site locality and site layout have been identified in **Figure 1** and **Figure 2** in **Appendix A** respectively. Photographs of the area and material assessed have been presented in **Appendix B**.

# 2 Background

SLR understands the following with respect to the proposed development approved under SSD 7704:

- The development site is comprised of 14 registered freehold lots (or part lots) and one section of unformed Council public road
- Development on the site is proposed to include:
  - Four individual poultry farms, each comprising between 10 and 18 poultry sheds (total of 54 poultry sheds) and associated support/servicing infrastructure
  - Various other support/servicing infrastructure items.

Environmental assessments were undertaken to support the proposed development, with a preliminary site investigation (PSI) and a detailed site investigation (DSI) undertaken by SLR in 2018 and 2019 respectively.

## 2.1 Previous Investigations

### 2.1.1 Preliminary Site Investigation

The PSI undertaken by SLR titled '*Stage 1 Preliminary Site Investigation Proposed Poultry Production Farm Rushes Creek Road, Rushes Creek*' dated July 2018 (SLR 2018) concluded that:

- An area of environmental concern (AEC) was identified for the site (former sheep dip)
- Further investigation works are required.

Following exhibition of the Environmental Impact Statement (EIS), the Department of Planning, Industry and Environment (now DPIE) and the Environment Protection Authority (EPA) requested that a DSI be undertaken to assess the identified AEC prior to determination of the Development Application (DA).

### 2.1.2 Detailed Site Investigation

The DSI undertaken by SLR titled '*Detailed Site Investigation Proposed Poultry Production Farm Rushes Creek Road, Rushes Creek NSW*' dated February 2019 (SLR 2019) concluded the following

- Analytical results indicate that arsenic in soil, likely to be associated with the former sheep dip, is elevated above the relevant soil health investigation level (HIL) for standard residential with garden/accessible soil (HIL-A) guideline value in the National Environmental Protection Council's *National Environmental Protection (Assessment of Site Contamination) Measure*, as amended in 2013 (NEPM 2013)
- Soil sampling undertaken as part of the DSI has delineated the arsenic contamination to the north and south of the sheep dip, with low concentrations still exceeding the HIL-A guideline extending beyond the limit of the assessment to the east (assessment limited by the site shed) and to the west (with concentrations not expected to extend more than 10 metres west given the reducing concentrations from the source)
- Based on the guidance provided in NEPM 2013, SLR considers that the arsenic in soils contamination at the site presents an unacceptable risk to present and future site users, particularly during the proposed site redevelopment. Therefore, the arsenic identified in soils at the site is considered to warrant remedial action.

A groundwater assessment was not undertaken as part of the DSI due to the limited leaching potential of the identified arsenic (confirmed with toxicity characteristic leaching procedure analysis), the observed reduction in arsenic concentrations in soil with depth, and the anticipated depth of groundwater.

### 2.1.3 Remedial Action Plan

A RAP titled *Remedial Action Plan Proposed Poultry Production Farm Rushes Creek Road, Rushes Creek, NSW* (SLR 2019) was prepared and approved as part of the development consent for the poultry farm. The remedial strategy detailed in the 2019 RAP was to excavate the arsenic contaminated soil and dispose of this material off-site at a facility licensed to receive the waste.

It has since been identified that the landfill at Kemps Creek on the western fringes of Sydney is the only landfill licensed in NSW to take the contaminated soil. Contractor pricing for the transport and disposal of the arsenic contaminated soil at Kemps Creek is not feasible. As such, an alternative remediation approach is now proposed in this revised RAP.

# 3 Objectives

This revised RAP has been developed to:

- Propose an alternative preferred remediation approach for the arsenic impacted soils to what was detailed and approved in the 2019 RAP, and
- Guide the management of the arsenic impacted soil in the area of the former sheep dip a manner that mitigates potential human health risks that may arise from the proposed poultry farm development.

The revised RAP has been prepared to ensure the remediation is undertaken in accordance with applicable legislation, codes of practice and guidelines, and ensure that the site is considered suitable for the proposed use.

Specifically, the key remediation objectives are as follows:

- To effectively remediate arsenic in soil contamination present at the site, allowing the site to be utilised for its proposed land use

- To ensure remedial works are undertaken in a manner that:
  - Is safe, with remediation works to be protective of human health and the environment
  - Prevents potential cross contamination with the implementation of appropriate controls
  - Adheres to applicable legislative requirements, including but not exclusively, the contaminated land planning guidelines and any guidelines in force under the *Contaminated Land Management Act* 1997
- To ensure that remediation documentation is kept to a standard that will generally comply with the NSW EPA *Contaminated Land Guidelines: Consultants Reporting on Contaminated Land* (2020)

# 4 Scope of Works

SLR undertook the following scope of work to address the project objectives:

- Review of available contamination related information pertaining to the remedial area
- Appraisal of applicable remediation options, in consideration of factors such as, but not limited to, costs, timing, and impact on proposed development work and the potential impact on the value of the development
- Identification of the preferred alternative remediation option
- Consideration of the steps and processes to be followed, to successfully implement the preferred alternative remediation option
- Identification of the validation requirements for the preferred alternative remediation option, to demonstrate that the remediation works have been conducted satisfactorily
- Preparation of this revised RAP.

# 5 Consultation

The following consultation activities have been undertaken by ProTen:

- **EPA** - the possibility of an alternative remediation approach comprising containment of the arsenic impacted soils on-site either in-situ or in a containment cell was raised with the EPA (Armidale office) in March 2021. The EPA verbally indicated that it would be happy to consider a revised RAP with on-site containment instead of off-site disposal. The EPA also indicated that there shouldn't be any reason that remediation works should hold up commencing construction given the arsenic impacted soil is not within the development disturbance footprint and is not considered high-risk.
- **DPIE** - the possibility of an alternative remediation approach comprising containment of the arsenic impacted soils on-site either in-situ or in a containment cell was raised with DPIE in March 2021. This engagement also queried the need for a modification to the development consent in relation to a revised RAP, with DPIE recommending ProTen to seek a modification to amend the previously approved 2019 RAP.

- **EPA** and **Council** - a copy of this revised RAP was forwarded via email to the Armidale EPA office and Tamworth Regional Council on 23 April 2021 for review and comment ahead of submitting the development modification application to DPIE.

# 6 Site Identification

The site locality and proposed remedial area have been identified in **Figure 1** and **Figure 2**, in **Appendix A** respectively.

The larger development site comprises the following land parcels:

- Lot 1 in DP 44215
- Part Lot 1 in DP 1108119
- Lot 1 in DP 1132298
- Lots 26, 85, 86, 101, 118, 165, 166 and 171 in DP 752169
- Part Lot 143 in DP 752189
- Lot 1 in DP 1132078
- Lot 1 in DP 1141148
- A section of unformed Council public road traversing through Lot 171 DP 752169.

The development site is irregular in shape and occupies an area of approximately 1,016 hectares. The remedial area is an unsealed area of the site at and adjacent to the former sheep dip, located beside an old abandoned sheep holding shed. The remedial area covers approximately 700 $m^2$, occupying a small portion of Lot 165 of Deposited Plan (DP) 752169.

## 6.1 Regional Geology

The NSW Government *Manilla 1: 100,000 Geological Sheet 9036*, First edition, 2013, indicates that the site is likely to be underlain primarily by Upper Devonian Mandowa Mudstone, comprising thinly bedded laminated and massive mudstone with subordinate, thin siltstone and fine-grained sandstone beds.

## 6.2 Site Lithology

The generalised lithology encountered at the site during the DSI (SLR 2019) can be described as:

- Topsoil: Dark brown loam topsoil was generally encountered from surface to approximately 0.1m in depth. The topsoil was generally described to be soft, dry, with low plasticity, and with vegetation present at the surface
- Silty Clay: From depths of 0.1m to 0.7m, silty clay soil was present and can be generally described as brown to reddish brown, soft, dry, with low plasticity, with presence of angular to sub-angular shale (10-30mm) at lower depths (0.5-0.7m)

- Shale: From depths of 0.6m to 1.3m is the presence of angular to sub-angular shale (20-50mm). It is noted that excavator refusal was typically encountered at depths of 0.9m to 1.3m due to very stiff shale.

Details of the lithology encountered during the DSI (SLR 2019) have been presented in logs and included in **Appendix C**.

## 6.3 Hydrogeology

The nearest significant surface water features to the remedial area are:

- Rushes Creek, located approximately 614m to the east
- Namoi River, located approximately 3.7km to the west and 2.3km to the north
- Lake Keepit, located approximately 3.1km to the west (dam full supply level).

A search of the NSW Government's online groundwater works database as part of the DSI (SLR 2019) identified five registered groundwater bores within 1000m of the former sheep dip location. The groundwater bore search information has been summarised in the table below.

**Table 6-1 Groundwater bores within 1000m of the proposed remediation area**

| Approximate distance from site | Direction from site | Borehole Number | Latitude / Longitude | Authorised/Intended Purpose | Final Depth | Salinity | Standing Water Level |
|---|---|---|---|---|---|---|---|
| 95m | SE | GW967889 | -30.814734 150.598204 | Stock, Domestic | 67m | - | 14m |
| 175m | E | GW011498 | -30.813981 150.599741 | Not Known | 24.4m | - | - |
| 700m | NW | GW967028 | -30.809817 150.592187 | Stock | 55m | - | 17.3m |
| 790m | NE | GW009093 | -30.81037 150.605018 | Not Known | 8.5m | Brackish | - |
| 790m | NE | GW038206 | -30.81037 150.605018 | Not Known | 12.8m | - | - |

Groundwater was not assessed during previous investigations due to the limited leaching potential of the identified arsenic (confirmed with Toxicity Characteristic Leaching Procedure analysis), the observed reduction in concentration within a shallow depth, the clay rich soils and the anticipated depth of groundwater. Further discussion on why the arsenic impacted soils do not pose a risk to groundwater are provided in **Section 7.3**.

## 6.4 Topography

A review of the overall development site's topography conducted using Google Earth topographical data suggests that the site is relatively flat, ranging between around 325 m Australian Height Datum (AHD) and 410m AHD, with typical grades of 2% (2m in every 100m). The proposed remediation area has an elevation of approximately 373-374m AHD.

## 6.5 Acid Sulfate Soils

A review of the Australia Soil Resource Information System (ASRIS) indicated that there was no known occurrence of acid sulfate soils at or within the immediate vicinity of the proposed remediation area.

# 7 Revised Remedial Action Plan

## 7.1 Remedial Goal

The primary remedial goal for this site is to reduce the risk posed to human and environmental receptors in the proposed development from the identified arsenic impacted soil.

Given the proposed development includes residential housing (considered to be low density), the criteria applied to the remediation would be the National Environmental Protection Council's *National Environmental Protection (Assessment of Site Contamination) Measure*, as amended in 2013 (NEPM 2013) 'Schedule B1 – *Guideline on Investigation Levels for Soil and Groundwater*'. The NEPM 2013 guidelines provide a framework for the use of investigation and screening levels based on human health and ecological risks.

The soil health investigation levels (HILs) detailed in the NEPM (2013) are scientifically based, generic assessment criteria designed to be used in the initial screening of data for assessment of potential risks to human health from chronic exposure to contaminants. The following HILs are referenced in the NEPM (2013) guidelines:

- HIL-A includes standard residential with garden/accessible soil
- HIL-B includes residential with minimal opportunities for soil access, includes dwellings with fully and permanently paved yard space such as high-rise buildings and flats
- HIL-C includes developed open space such as parks, playground, playing fields (e.g. ovals), secondary schools and footpaths and
- HIL-D includes commercial/industrial premises such as shops, offices, factories and industrial sites.

In consideration of the site's proposed land use, the remedial action criteria (RAC) has been selected based upon a residential (HIL-A) land use, which is considered to be the most conservative approach.

Soils exceeding the adopted RAC will require to be remediated and/or managed.

## 7.2 Extent of Remediation Required

Remedial works are required for the arsenic impacted soil material within the vicinity of the former sheep dip.

The lateral extent of elevated arsenic detected during the DSI (SLR 2019) has been presented in the following of **Appendix A**:

- **Figure 3** (upper portion of the remedial area 0.1-0.2 metres below ground level [mbgl]),
- **Figure 4** (intermediate portion of the remedial area 0.6-0.8 mbgl) and;
- **Figure 5** (deep portion of the remedial area 0.9-1.3 mbgl) with the extent presented based on exceedance of the adopted HIL-A guideline value of 100 mg/kg.

The maximum depth of elevated arsenic contamination detected during the DSI (SLR 2019) was at 1.2 mbgl, which was the depth of practical refusal (on weathered shale) with the small excavator utilised. Noting that concentrations of arsenic decreased with depth.

The extent of shallow arsenic contamination may also extend beneath the former sheep holding shed located immediately to the east of the former sheep dip site.

## 7.3 Risk to Underlying Groundwater

The nearest groundwater extraction bore is located approximately 95m southeast of the remediation area. The bore which was drilled to approximately 65 mbgl, had a water bearing zone logged at 14mbgl, however, no extraction from this depth was noted.

Bore drill logs for the site indicate the presence of weathered regolith (saprolite) recorded as clay lithology. This layer, where logged, is between 0.5 and 3 m thick approximately 2 m below the surface layer restricting downward migration of water into the groundwater system, immediately above competent basement rocks.

Numerous groundwater bore installations are proposed as part of the site development for extraction purposes. It is noted that the nearest purposed groundwater bore is approximately 800m north-west of the site, having an approximate constructed depth of approximately 180mbgl with uppermost 50m containing cement grout to prevent overlying aquifer intrusion.

The closest downgradient surface water body is 3.1 km to the west of the site and is unlikely to impacted by contamination contained on-site.

Mobilisation of the arsenic contamination is considered to be low, as analysis results included in the DSI indicated low leachability of the arsenic impacted soils. Arsenic leachability analysis indicated a mean of 0.57 mg/L and a maximum value of 4.80 mg/L, which is lower than the NSW EPA 2014 General Solid Waste TCLP1 (leached) criteria (5.0mg/L).

Additionally, SLR referred to the US EPA (EPA 2009) regulatory threshold for the toxicity characteristic of leachable arsenic of 5.00 mg/L. The leachability of arsenic is below 5.00 mg/L (as measured by the toxicity characteristic leaching procedure [TCLP]), which is a common treatment goal for soil and waste in accordance with Resource Conservation and Recovery Act (RCRA, 1976).

Given the low leachability of the arsenic impacted soil, the depth to groundwater, the distance to the nearest surface water body, the risk to groundwater from the arsenic impacted soil is considered to be low.

## 7.4 Remedial Options

A number of remedial options were considered for the arsenic contaminated soils at the site. In consideration of the proposed land use and fiscal viability, the remedial options outlined in the following options are considered appropriate to remediate the site.

### 7.4.1 Excavation and Off-Site Disposal

Off-site disposal to an appropriately licensed landfill facility was originally proposed and approved as part of the 2019 RAP to remediate the site. It has since been identified that the landfill at Kemps Creek on the western fringes of Sydney is the only landfill licensed in NSW to take the contaminated soil. Based on contractor pricing for the transport and disposal of the arsenic contaminated soil at Kemps Creek, this option is now the least fiscally viable due to the sites' remote location and the distance to Kemps Creek. The waste hierarchy, which underpins the objectives of the Waste Avoidance and Resource Recovery Act 2001, also promotes the diversion of waste from landfill disposal, therefore making disposal to landfill less preferable.

### 7.4.2 On-Site Management – Cap and Contain

Arsenic contaminated soil identified at the site could be managed using a cap and contain methodology, with the construction of a suitable barrier to reduce the likelihood of exposure of potential receptors to the underlying arsenic impacted soil. To achieve this remedial option, an adequately sized containment cap would need to be constructed at the site. Ongoing management of the cap, via an Environmental Management Plan (EMP), would be required.

The containment cap would provide a barrier between the impacted soil and site users. The cap would include a low permeability cover layer to reduce surface water infiltration, thus minimising the potential for arsenic to leach from the soils, providing additional protection to groundwater. However, given the low risk to groundwater (refer **Section 7.3**), groundwater protection is not the driver for remediation.

The onsite management option would include the creation of an exclusion perimeter with appropriate signage to further reduce the likelihood of exposure of potential receptors.

Additionally, mechanisms to prevent development and disturbance in the future would be required, such as identification/registration of the area on the following:

- The site's Section 10.7 council planning certificate
- Certificate of title
- Planning authority tools such as Council's GIS
- Dial Before You Dig and
- Other relevant planning/environmental databases.

A cap and contain methodology is considered to be the preferred remedial option based on human and ecological health risk potential, fiscal viability and the long-term site use.

## 7.5 Remedial Strategy

Based on the discussions with the client, consultation with the EPA, the risks posed to potential receptors including humans at the site and groundwater, and in consideration of the proposed development, the preferred alternative remedial strategy is on-site containment of arsenic contaminated soil.

# 8 Remedial Sequence of Works

## 8.1 Preparatory Works

### 8.1.1 Approvals and Notifications

The remediation of soil impacted with arsenic is considered Category 2 remediation works.

As outlined in the *State Environment Planning Policy No 55 – Remediation of Land*, where Category 2 remediation work is proposed to be carried out on any land, notice of the proposed work must be issued to the council for the local government area in which the land is situated.

The notice must be given at least 30 days before the commencement of the work and must include the following:

- be in writing, and provide the name, address and telephone number of the person who has the duty of ensuring that the notice is given
- briefly describe the remediation work
- show why the person considers that the work is Category 2 remediation work
- specify, by reference to its property description and street address (if any), the land on which the work is to be carried out
- provide a map of the location of the land and
- provide estimates of the dates for the commencement and completion of the work.

A notice of completion of remediation work on any land must be given to the council for the local government area in which the land is situated within 30 days after the completion of the work. A validation report, detailing the works undertaken will also be issued to the council within 30 days of completion of remediation work. Details to be included in the validation report have been outlined in **Section 8**.

### 8.1.2 Site Establishment

The remediation contractor will mobilise plant and equipment appropriate to the nature and extent of the project.

Site establishment will include the setup of remediation works zones with appropriate fencing, barriers and signage to delineate the zone from other work areas and set up and implementation of the environmental controls specified in this RAP.

### 8.1.3 Underground and Overhead Services

All services on the site will be required to be identified prior to remediation works and terminated or re-directed if required.

### 8.1.4 Demolition and Removal of Sheep Holding Shed

The demolition and removal of the existing sheep holding shed within the remedial area indicated on **Figure 6** in **Appendix A** is required to enable delineation of contamination within the shed area to determine extent of capping.

### 8.1.5 Delineation of Capping

The extent of the remedial area will be guided by laboratory analysis of delineation samples subsequent to demolition and removal of the sheep holding sheep. Samples are to be collected from near surface (0.0-0.1 mbgl) extending from west from TP15 (2 samples) and east from TP 17 (3 samples) as indicated in **Figure 6** in **Appendix A**. The remediation capping will be extended as required until the selected validation criteria are satisfied.

### 8.1.6 Site Surveying

Site survey is required to be conducted prior to the commencement of capping works to establish the base level and to mark out the extents of the cap. The base level survey would be used to determine the elevations and extents of each layer for use by the contractor.

Survey would also be required upon completion of each capping layer to validate the capping layers have achieved the desired thickness, grade and extent. The survey would need to show thickness of each layer perpendicular to the slope and take readings at a maximum of 10 m centres.

## 8.2 Remedial Works

A summary of the layers and stages included in the cap is provided in the following.

### 8.2.1 Vegetation removal

Prior to the placement of any material for the cap, vegetation in the remedial area needs to be removed to the extent practical without disturbing the impacted soil. This will include:

- mowing the area as close to ground level as possible and
- covering area with weed matting.

### 8.2.2 Capping Construction

The remedial area should be capped in accordance with **Figure 7** of **Appendix A**. Layers of the capping are summarised in **Table 8-1** and outlined in the sections below. The cap should be a minimum of 5 % grade to enable surface water runoff, and a maximum of 20% grade to reduce the likelihood of erosion.

**Table 8-1 Remedial Area Capping Summary (from bottom to top)**

| Capping Layer No. | Description |
|---|---|
| Layer 1 – Earthen Cover Layer | Typically, a clay rich layer of cover soil and minimum of 0.30 m thick. This layer thickness is proposed to be increased in thickness to achieve final design grades. |
| Layer 2 – Low Permeability Compacted Clay | Typically, onsite silty clays without boulders and minimum of 0.30 m thick. |
| Layer 3 - Upper Subsoil | Typically, a sandy clay sub-base minimum 0.50 m thick |
| Layer 4 – Topsoil Layer | Typically, 0.20 m thick |
| **Total** | **1.30 m thick (min)** |

#### 8.2.2.1 Earth Cover Layer Construction

The earth cover layer will be placed over the weed mat and thickened as required to achieve final cap grades. It will act as a working platform for construction of the low permeability clay layer. The layer should include site won clay rich soils, with no material greater than 150 mm, and not more than 20% of the material having dimensions greater than 40 mm.

The layer shall be compacted in maximum 200 mm (compacted) layer thickness.

#### 8.2.2.2 Low Permeability Compacted Clay Cover Layer Construction

The low permeability compacted clay layer will be placed over the earth cover layer to and will act to reduce surface water infiltration into the remedial area. The layer should include site won clay rich soils, capable of achieving a permeability of 1 $x10^{-8}$ or lower. The clay should be free of material greater than 40 mm. The layer should be a minimum of 0.3 m thickness.

The layer shall be compacted in maximum 200 mm (compacted) layer thickness. The soil should be moisture conditioned during placement to make it workable into a uniform layer. The lower layer shall be scarified prior to placement of the overlying layer to assist in developing a uniform clay layer. The layer shall be compacted using a vibrating pad foot roller or similar, , and each layer scarified prior to placement of the overlying layers.

The clay layers shall be covered soon after placement to ensure they do not dry out and crack.

#### 8.2.2.3 Upper Subsoil Layer

The upper subsoil layer will be placed over the low permeability compacted clay layer. It will act as a protection layer over the compacted clay and provide additional thickness between receptors and the arsenic impacted soil. The layer should be a sandy clay or silt, with no material greater than 150 mm.

The layer shall be compacted in maximum 200 mm (compacted) layer thickness.

#### 8.2.2.4 Topsoil layer Placement

The topsoil layer will be placed over the upper subsoil layer. It will accommodate shallow rooted vegetation. It could be a compost layer (in accordance with AS 4454), and must be free of material greater than 150 mm. It should be capable of supporting vegetation. The topsoil layer shall be a minimum of 0.2 m thick and be loosely placed and not compacted.

### 8.2.3 Vegetation Establishment

The entire topsoil layer shall be vegetated with grasses. Vegetation should not include species with roots that could penetrate the upper subsoil layer. Where possible, the grasses should be native and be similar to existing grasses at the Site.

### 8.2.4 Perimeter Fencing and Signage

The remedial area shall be secured with perimeter fencing and associated signage to be constructed to be:

- Vermin proof

- Outside of the remedial area
- Include signage identifying arsenic impacted soil and that no excavation can occur, and contact details of relevant authorities and parties should access be required.

The remedial area will require access for maintenance and mowing and should include a locked gate that can accommodate mowing equipment and plant that may be required for maintenance works in the future (if required).

## 8.3 Registration/Identification of Area

Given the presence of arsenic impacted soil, all efforts must be made to activate mechanisms that will prevent disturbance of the area. These include identification/registration of the area on the following:

- The site's Section 10.7 council planning certificate
- Certificate of title
- Planning authority tools such as Council's GIS
- Dial Before You Dig
- NSW EPA contaminated land register and
- Other relevant planning/environmental databases.

## 8.4 Imported Soil Material

Capping soil material can be virgin excavated natural material (VENM) sourced from within the site or from an off-site source. Imported VENM from an off-site source is to be accompanied by a certificate prepared by a suitably qualified consultant verifying that the material is VENM. The VENM certificate should be reviewed and approved by a suitably qualified environmental consultant and the VENM material should be inspected by a suitably qualified environmental consultant prior to placement.

## 8.5 Environmental Management Plan

An EMP will be required for the remedial area, and will be prepared at the completion of the remediation and validation work. It will include the validation report as an attachment and will document the necessary management requirements for the remedial area and associated responsible parties.

## 8.6 Unexpected Finds Protocol

The assessments to date have not indicated the presence of significant soil contamination that would preclude the proposed remedial activities and methodology. However, it is possible that, yet unidentified contamination is present within the fill material/subsurface of the site.

Potentially hazardous substances could include, but are not limited to:

- Underground storage tanks
- Buried containers and drums
- Phase separated hydrocarbons

- Asbestos containing materials
- Powders and other suspicious buried material and
- Evidence of contamination including significant staining, odours and discolouration.

SLR has prepared a detailed Unexpected Finds Procedure for inclusion in the Construction Environmental Management Plan (CEMP) for the poultry farm development in accordance with condition B50 of Development Consent SSD 7704. In summary, in the event that any material suspected of containing potentially hazardous substances is found during remediation works, the following steps will be followed:

1. The environmental consultant and relevant authorities will be consulted immediately for assessment and advice.
2. The area of concern will be cordoned off.
3. Appropriate environmental management measures will be implemented until the assessment is completed and further advice is received from the consultant.
4. The environmental consultant will undertake any necessary assessment and provide advice on a strategy to manage the identified unexpected contamination.
5. The RAP may require revision depending on the findings and proposed management strategy.

## 8.7 Remediation Contingency Plan

Based on potential uncertainties associated with soil remediation works of this nature, the situations and contingencies presented in **Table 8-2** will be considered during remediation works.

**Table 8-2 Remediation Contingency Measures**

| Situation | Contingency Measure | Potential for Occurrence |
|---|---|---|
| Encountering yet unidentified contamination | The identified contamination (the nature and extent) will be assessed by a qualified and experienced environmental consultant, such that it can be appropriately remediated | Low potential to encounter yet unidentified contamination |
| Volumes of contaminated material being significantly greater than anticipated | Extension of capped area | Low potential to occur based on the delineation data from DSI (SLR 2019) |

# 9 Validation

## 9.1 Validation Criteria

### 9.1.1 Health Screening Levels – Arsenic

To ensure that remaining soil following remedial works is considered suitable for the proposed development, reference will primarily be made to the NEPM 2013 HIL-A guideline as outlined in **Section 6.1**.

Soils exceeding the adopted RAC will require to be included in the remedial area.

### 9.1.2 Aesthetics

The NEPM (2013) requires that aesthetic quality of accessible soils be considered even if testing suggests that the concentrations of contaminants of concern are within acceptable limits.

No specific numerical guidelines have been assigned for aesthetics. However, NEPM (2013) indicates that professional judgement with regard to quantity, type and distribution of foreign material and/or odours in relation to the specific land use and its sensitivity will be employed.

The following circumstances are considered likely to trigger further aesthetic assessment:

- Highly malodorous soils (e.g. strong residual petroleum hydrocarbon odours, hydrogen sulphide in soil or extracted groundwater, organo-sulfur compounds)
- Discoloured chemical deposits or soil staining with chemical waste other than of a very minor nature
- Large monolithic deposits of otherwise low risk material, e.g. gypsum as powder or plasterboard, cement kiln dust
- Presence of putrescible refuse including material that may generate hazardous levels of methane and
- Soils containing residue from animal burial.
- Asbestos containing materials

In arriving at a balanced assessment, the presence of small quantities of non-hazardous inert material and low odour residue (for example, weak petroleum hydrocarbon odours) that will decrease over time, should not be a cause of concern or limit the use of a site in most circumstances. Similarly, sites with large quantities of well-covered known inert materials that present no health hazards such as brick fragments and cement wastes (for example, broken cement blocks) are usually of low concern for both non-sensitive and sensitive land uses.

Given the results from the DSI, it is considered unlikely that soil will require additional remediation based on aesthetic observations.

## 9.2 Construction Quality Assurance

Independent verification of construction by a suitably experience person is required throughout remedial activities. This should include:

- Survey (or other method) of each layer to demonstrate layer thickness, elevation and grade at maximum of 10m centres
- Preconstruction permeability testing of clay material for sue in the low permeability compacted clay layer
- Particle size distribution testing of each soil layer prior to construction
- Contamination testing of any imported soil
- Photographs of each layer following construction
- Inspection of the surface prior to placement of earth cover layer, during construction of low permeability clay layer, and following vegetation establishment
- Review of survey data for each layer to confirm layer thickness

- Review of clay testing results
- Preparation of construction validation report detailing all elements of construction, and detailing any variations to the design

## 9.3 Validation Reporting

Following the completion of all remediation activities, a validation report will be prepared in accordance with NSW EPA 2020, '*Contaminated Land Guidelines: Consultants Reporting on Contaminated Land*'.

The validation report will include the following:

- Executive summary
- Scope of work
- Site identification
- Summary of site history
- Summary of site condition and surrounding environment
- Summary of geology and hydrogeology
- Construction validation report detailing all elements of construction, and detailing any variations to the design
- Information on remediation works, including site activities, waste documentation correlation and validation
- Results of field and laboratory work
- Field and laboratory quality assurance/control information and evaluation
- Site validation discussion
- Ongoing site monitoring requirements (if any) and
- Conclusions and recommendations.

# 10 Data Quality Objectives

Data quality objectives (DQO) have been developed using the seven step processes described in NSW EPA 2017, *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme* (*3rd edition*).

## 10.1 Step 1 – State the Problem

Elevated concentrations of arsenic in shallow soils require remediation and validation to confirm the suitability of the remediation area for the proposed land use.

## 10.2 Step 2 – Identify the Decision

The decisions that need to be made during this project include:

- Is the field and laboratory analytical data suitable for assessing the quality of the media being assessed

- Does residual soil contamination remaining on site following remediation present an unacceptable exposure human health exposure risk for the proposed land use scenario.

## 10.3 Step 3 – Identify Inputs to the Decision

The primary inputs to assessing the above include:

- The site history
- Location, distribution and intervals of sampling at the site
- Data collected during previous assessments, including field measurements, field observations and laboratory analysis results
- Outcomes of the assessment of the quality of collected data
- Site inspections and observations during remediation.

Validation criteria will be adopted from NEPM (2013) as outlined in **Section 8**.

## 10.4 Step 4 – Define the Study Boundaries

The lateral extent of the soil requiring remediation has been defined in **Figure 6** in **Appendix A**. The vertical boundaries are the depth of arsenic impacted soils. The temporal boundaries include the results of the previous sampling and the remediation works.

## 10.5 Step 5 – Develop a Decision Rule

The decision rules for the project will be as follows:

- If the site inspections confirm that the capping layer has been installed as per the RAP, then the site will be considered suitable for the proposed land use.
    - Note if there is insufficient information to confirm the nature of the capping layer installed, further assessments may be required to confirm the suitability of the site for the proposed land use.
- Where laboratory analysis is required:
    - If the results of the laboratory analytical data and QAQC samples are acceptable, the data will be considered suitable for the purposes of the project. Data will be assessed for completeness, comparability, representativeness, precision and accuracy
    - If the results of the laboratory analytical data are below the RAC, then the level of contamination in the media assessed will be considered an acceptable exposure risk
    - If the results of laboratory analytical data exceed the RAC, then the level of contamination in the media assessed may require further assessment, management or remediation.

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

There are two types of error:

- Deciding that contamination on the site is an acceptable risk for the proposed land use when it is not and
- Deciding that contamination on the site is not an acceptable risk for the proposed land use when it is.

Confidence in the reliability of assessment methods (e.g. field observations, laboratory analysis and data review) will be based on appropriate levels of qualification and/or experience in the personnel undertaking the relevant task.

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

### 10.7.1 Photographic Records

Photographs will be taken of the remediation activities and the finished capping.

### 10.7.2 Location Records

Each sampling location will be recorded using a handheld GPS unit with the depth of each sample to be recorded.

### 10.7.3 Sample Identification, Storage and Transport Procedures

Samples will be identified using unique sample identifiers and sample depths.

Samples will be placed in laboratory prepared containers and zip lock bags, as appropriate. The sample containers will then be placed directly into an insulated container with ice, for transportation to the NATA accredited analytical laboratory with the chain of custody (COC) form recording the following information:

- Project job number
- Date of sampling
- Sample identifier
- Sample matrix and container type
- Preservation methods used
- Analysis requirements for each sample
- Turnaround times required for analysis and
- Names and signatures of sender and receiving laboratory.

A copy of the COC will be kept in the job file. Samples will be transported to the laboratory with sufficient time to perform analysis within the applicable holding period.

## 10.8 Quality Assurance / Quality Control

### 10.8.1 Intra-laboratory Duplicates

Intra-laboratory field duplicates will be collected on an average frequency of one sample per twenty samples collected (5%), with a minimum of one per batch. The analytical results of the two split samples will be compared to assess the precision of the sampling protocol and provide an indication of variability in the sample source. The relative percentage difference (RPD) acceptance limits are as follows:

- No limit analytical results <10 times laboratory limit of reporting (LOR)
- 50% analytical results 10-20 times LOR
- 30% analytical results >20 times LOR

Any RPD exceedances are to be assessed to determine whether the project DQO's can still be addressed.

### 10.8.2 Inter-Laboratory Duplicates

Inter-laboratory field duplicates will be collected on an average frequency of one sample per twenty samples collected (5%) with a minimum of one per batch. The analytical results of the two split samples are to be compared to assess the precision of the sampling protocol and provide an indication of variability in the sample source. The RPD acceptance limits are as follows:

- No limit analytical results <10 times LOR
- 50% analytical results 10-20 times LOR
- 30% analytical results >20 times LOR

Any RPD exceedances are to be assessed to determine whether the project DQO's can still be addressed.

### 10.8.3 Laboratory Data Quality Indicators

The laboratory data quality will be assessed by checking the following:

- Laboratory methods used are NATA accredited
- Laboratory limits of reporting are less than adopted RAC
- Samples are extracted and analysed within holding times and
- Results of method blanks, surrogate, lab control sample, spike recoveries RPDs between primary and duplicate laboratory samples.

Where results of laboratory quality control samples exceed the relevant adopted control limit, the laboratory will be requested to assess the significance of the exceedance on the quality of the laboratory analytical data for the relevant batch. Based on the significance of the control limit exceedance, the data will be assessed against the project DQO's.

### 10.8.4 Decontamination Procedures

Non-disposable sampling equipment will be decontaminated before and between sampling locations to reduce the potential for cross contamination to occur between samples. Decontamination will include the following procedure:

- Washing non-disposable sampling equipment in a solution of phosphate free detergent (e.g. Decon 90) and potable water; and
- Rinsing with distilled water.

# 11 Site Management

## 11.1 Register of Contacts

A register of contacts for the remedial works is presented in **Table 11-1**.

**Table 11-1 Register of Contacts**

| Project Role | Person Assigned | Company | Contact Details |
|---|---|---|---|
| Environmental Consultant implementing RAP | Jason Roesler | SLR Consulting Pty Ltd | +61 2 9427 8100<br>jroesler@slrconsulting.com |
| Project Site Manager | TBA | TBA | TBA |
| Remediation Contractor | TBA | TBA | TBA |
| Independent Construction Quality Assurance Officer | TBA | TBA | TBA |
| Environmental Regulator | TBA | NSW EPA | 131 555<br>info@environment.nsw.gov.au |
| Planning Authority | Sally Munk | DPIE | 9274 6431<br>sally.munk@planning.nsw.gov.au |

## 11.2 Hours of Operation

The remediation works will be conducted between the hours of 7:00am to 6:00pm Monday to Friday and 8:00am to 1:00pm on Saturdays.

No work will be conducted on Sundays, public holidays or outside the hours specified above without approval from the appropriate regulatory authorities.

## 11.3 Site Signage and Contact Numbers

A sign displaying the contact details at which the remediation contractor may be contacted outside working hours (and site facilitator if different to the remediation contractor) will be displayed on the nominated remedial areas adjacent access to the areas. The signs will be displayed throughout the duration of the remediation works.

## 11.4 Site Security

The nominated remedial area will be secured with appropriate fencing to prevent unauthorised access.

## 11.5 Soil and Water Management

### 11.5.1 Site Access

Vehicle access to the remedial area will be stabilised to prevent tracking of sediment onto roads and footpaths. Soil, earth, mud or similar materials will be removed from the roadway by shovelling or a means other than washing, that isn't anticipated to generate dust, on a daily basis or as required.

Trucks will be unloaded within the remediation area.

Soil and sediment will be washed off vehicle/plant tyres and tracks, prior to vehicles/plant leaving the remediation area. This soil and sediment will be scraped / swept up and or disposed of depending on its contamination status.

A site-specific sediment and erosion control plan will be prepared and maintained by the remediation contractor. Erosion and sediment control measures will be maintained in a functional condition. Sediment laden stormwater runoff will be controlled using measures outlined in Landcom 2004, '*Managing Urban Stormwater - Soils and Construction*' (the Blue Book).

### 11.5.2 Stockpiles

It is not envisaged that stockpiling will be required. However, should stockpiling be undertaken as part of the remedial works, stockpiles of soil or other materials:

- Will be stored in a secure area
- Will be covered. Covering of the stockpiles will be undertaken by the contractor, subject to site conditions, expected inclement weather and duration the stockpile is expected to remain on site and
- Will be placed on a level area as a low elongated mound

### 11.5.3 Groundwater and Surface Water

Given the distance between the remediation area and closest surface water body, it is considered highly unlikely that any surface water from the remedial actions will discharge into a surface water receptor. There is also no reticulated stormwater or sewer infrastructure to receive surface water from the remedial area.

Given the likely depth of groundwater and underlaying clay, it is considered highly unlikely that groundwater will be impacted by the proposed remedial works.

## 11.6 Noise and Vibration

Noise levels from the site during the project will not exceed the limits indicated in AS2436-2010.

No 'offensive noise' as defined under the *Protection of the Environment Operations Act 1997* will be created during remediation works/activities.

## 11.7 Air Quality

### 11.7.1 Dust

Dust may be generated during demolition, transport and placement activities. To prevent excessive dust generation on site and emissions beyond the site boundary, if applicable, consideration will be given to implementing following procedures:

- Securely covering all loads entering or exiting the site. All trucks carrying soil to the site must be covered securely
- Use of water sprays across the site to suppress dust
- Keeping worked surfaces moist, where practical and deemed necessary
- Wetting down of placed fill material during spreading (if required)

- Minimising soil disturbance works during windy days and
- Maintaining stabilised site access/egress points for vehicles.

### 11.7.2 Odours

Given the findings of previous site assessments, generation of significant odours during the remediation works is considered to be highly unlikely.

## 11.8 Transport Vehicles

Haulage routes for trucks transporting soil, materials, equipment or machinery to and from the remedial area will be selected by the remediation contractor and will be meet the following objectives:

- Compliance with all traffic road rules
- Minimisation of noise, vibration and odour to adjacent premises
- Utilisation of State roads and minimisation of use of local roads.

The remediation contractor will ensure that all site vehicles:

- Carrying imported soil to the site must be securely covered
- Conduct deliveries of soil, materials, equipment or machinery during the hours of remediation work identified in **Section 11.2**
- Exit the site in a forward direction
- Do not track soil, mud or sediment onto the road.

## 11.9 Importation of Fill

Any soil to be imported to the site will under-go a visual inspection and validation through soil sampling. If material is to be imported to the site it is recommended that the material be certified as VENM. Imported VENM material with appropriate certification will be sampled at a rate of one sample per 100 $m^3$ and one sample per 25 $m^3$ of imported material that does not have appropriate certification for a general suite of contaminants of potential concern being TRH, BTEX, PAH, OCP/OPP, metals and asbestos (presence/absence).

## 11.10 Occupational Health and Safety

### 11.10.1 Hazard Identification and Risk Assessment

Each party working within the remediation area will prepare a project specific safe work method statement (SWMS) or job safety analysis (JSA), which will include:

- Identification of hazards associated with work tasks
- A risk assessment undertaken against each hazard identified
- Identification of control measures to mitigate or eliminate risks associated with the hazards identified.

### 11.10.2 Personnel Decontamination

Personnel working at the site are required to be decontaminated prior to leaving the remediation works zone. Decontamination will include:

- Cleaning down of boots
- Removal and discarding of all disposable personal protection equipment (PPE) items including the coveralls and masks
- Washing of hands.

### 11.10.3 Personal Protective Equipment

The minimum PPE required to be worn by persons entering the site during remediation works will comprise of the following:

- Hard hats
- Steel cap boots
- Hi-vis vest.

## 11.11 Emergency Preparedness

An emergency muster point will be established at the egress point of the site, to assemble workers in the event of an emergency. This muster point will be communicated to all workers during the project induction process.

Fire extinguishers and spill control kits will be available on site.

A register of contacts to be utilised in the event of an emergency is presented in **Table 11-2**.

**Table 11-2 Emergency Response Contacts**

| Project Role | Person Assigned | Company | Contact Details |
|---|---|---|---|
| Emergency Services | - | Fire / Police / Ambulance | 000 |
| OH&S Regulatory Authority | - | SafeWork NSW | 13 10 50 |
| Environmental Regulatory Authority | - | NSW EPA Environment Line | 131 500 |
| Project Site Manager | TBA | TBA | TBA |
| Remediation Contractor | TBA | TBA | TBA |
| Environmental Consultant | TBA | TBA | TBA |

## 11.12 Community Relations

Given the remote location of the remediation area, it is highly unlikely that the remediation will impact on adjoining neighbours. However, in-line with the commitments made in the EIS, the surrounding residents will be notified of the remediation works at least two days prior to the commencement via a letter drop. The letter will provide an overview of planned remediation activities, advise expected works duration and hours, and advise relevant site contacts.

Communication and complaints received for the remediation works will be reported to the Project Manager. All communications and complaints will be assessed and an appropriate response, corrective and/or preventative action implemented (as necessary).

A communication and complaints register will be operated on site to ensure that concerns of local residences and businesses are recorded and addressed.

# 12 Conclusion

SLR considers that soils on the site can be made suitable for the proposed development, subject to:

- Implementation of the measures outlined in this revised RAP
- Preparation of a site validation report
- Development of an EMP for the ongoing management of the remedial area.

# 13 Limitations

This RAP is for the exclusive use of ProTen Tamworth Pty Limited. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR Consulting.

This report has been prepared based on the scope of services (see below). SLR Consulting cannot be held responsible to the Client and/or others for any matters outside the agreed scope of services. Other parties should not rely upon this report and should make their own enquiries and obtain independent advice in relation to such matters.

This report has been prepared by SLR Consulting with reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with the Client. Information reported herein is based on the interpretation of data collected (data, surveys, analyses, designs, plans and other information), which has been accepted in good faith as being accurate and valid.

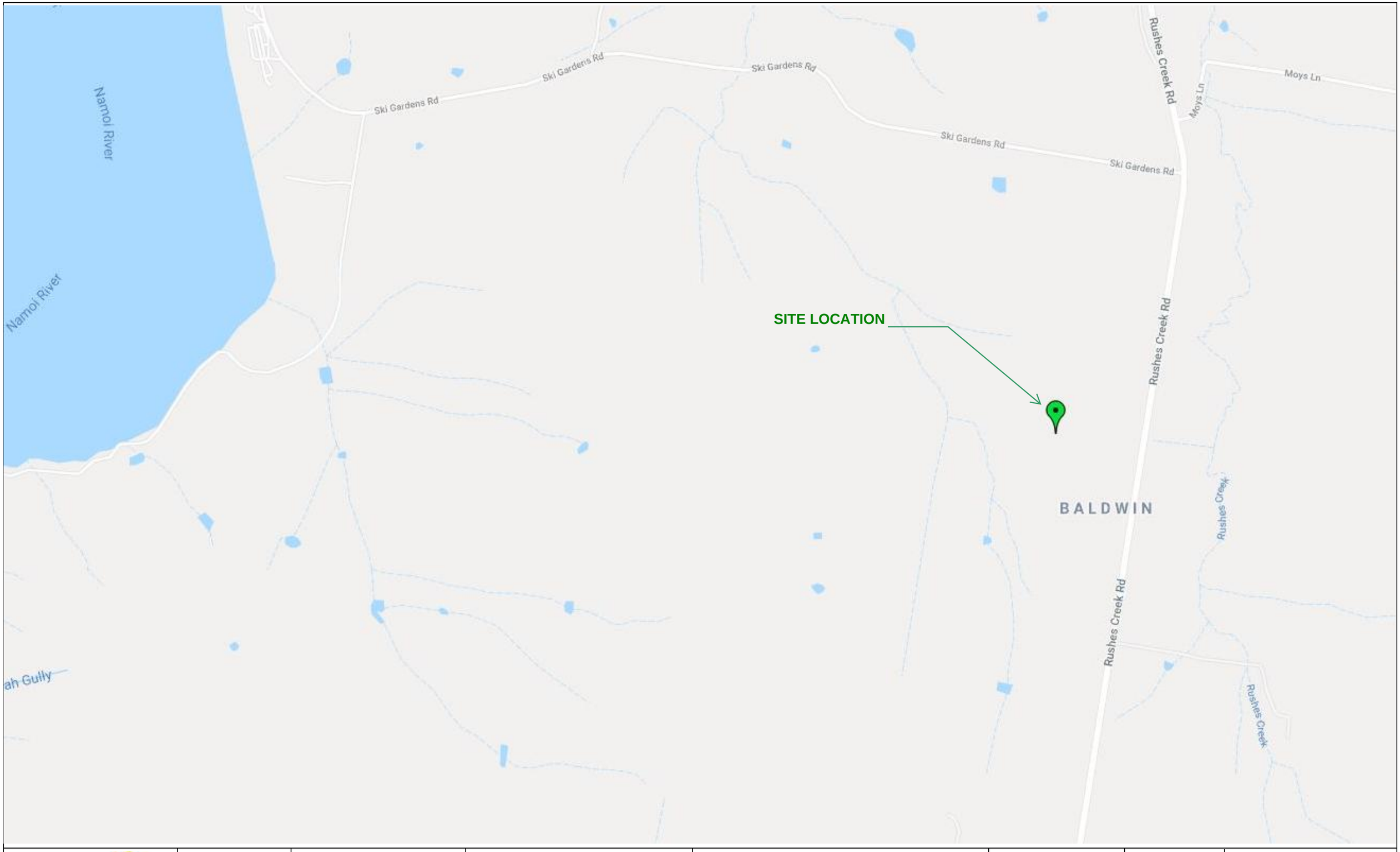
It should be noted that many investigations are based upon an assessment of potentially contaminating processes which may have occurred historically on the site. This assessment is based upon historical records associated with the site. Such records may be inaccurate, absent or contradictory. In addition documents may exist which are not readily available for public viewing.

Except where it has been stated in this report, SLR Consulting has not verified the accuracy or completeness of the data relied upon. Statements, opinions, facts, information, conclusions and/or recommendations made in this report ("conclusions") are based in whole or part on the data obtained, those conclusions are contingent upon the accuracy and completeness of the data. SLR Consulting cannot be held liable should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to SLR Consulting leading to incorrect conclusions.

Should the report be reviewed for any reason, the report must be reviewed in its entirety and in conjunction with the associated Scope of Services. It should be understood that where a report has been developed for a specific purpose, for example a due diligence report for a property vendor, it may not be suitable for other purposes such as satisfying the needs of a purchaser or assessing contamination risks for classifying the site. The report should not be applied for any purpose other than that originally specified at the time the report was issued.

Report logs, figures, laboratory data, drawings, etc. are generated for this report by SLR consultants (unless otherwise stated) based on their individual interpretation of the site conditions at the time the site visit was undertaken. Although SLR consultants undergo training to achieve a standard of field reporting, individual interpretation still varies slightly. Information should not under any circumstances be redrawn for inclusion in other documents or separated from this report in any way.

# APPENDIX A




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SLR | 202 Submarine School, Sub Base Platypus, North Sydney, NSW, 2060 | T: +61 2 9428 8100<br>sydney@slrconsulting.com<br>www.slrconsulting.com | **Ref**: 610.30237.00000<br>Proposed Poultry Production Complex<br>Rushes Creek Road, Rushes Creek, NSW | **Figure 1**<br>Site Locality | April 2021 | N | Prepared: JR 09/04/2021<br>Checked: JE 09/04/2021 |


| | | | | | | |
|---|---|---|---|---|---|---|
| SLR | 2 Lincoln Street,<br>Lane Cove,<br>NSW 2066<br>Australia | T: +61 2 9428 8100<br>sydney@slrconsulting.com<br>www.slrconsulting.com | **Remedial Action Plan**<br>Ref: 610.18456.00000 | **Proposed Poultry Production Complex**<br>**Rushes Creek Road, Rushes Creek, NSW** | February 2019 | N | **Figure 2**<br>**Site Layout** |

## Arsenic concentrations (mg/kg) at depth 0.1 metres to 0.2 metres


| | | | | | | |
|---|---|---|---|---|---|---|
| SLR | 2 Lincoln Street, Lane Cove, NSW 2066 Australia | T: +61 2 9428 8100 sydney@slrconsulting.com www.slrconsulting.com | **Remedial Action Plan** Ref: 610.18456.00100 | **Proposed Poultry Production Complex** **Rushes Creek Road, Rushes Creek, NSW** | February 2019 | N |

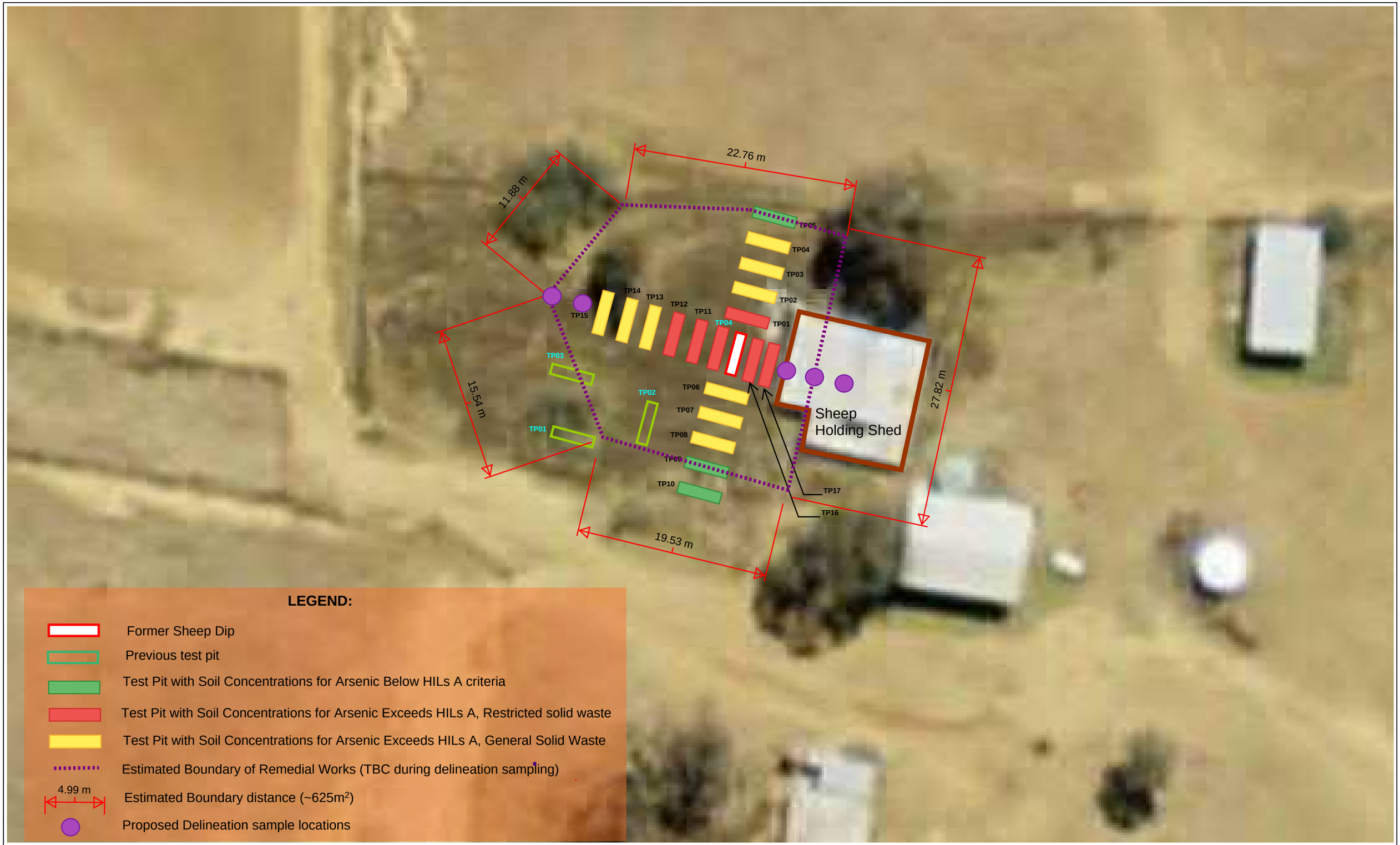
**Figure 3**
**Site Contamination Delineation (0.1-0.2 metres)**

## Arsenic concentrations (mg/kg) at depth 0.6 metres to 0.8 metres


| | | | | | | |
|---|---|---|---|---|---|---|
| SLR | 2 Lincoln Street, Lane Cove, NSW 2066 Australia | T: +61 2 9428 8100 sydney@slrconsulting.com www.slrconsulting.com | **Remedial Action Plan** Ref: 610.18456.00100 | **Proposed Poultry Production Complex** **Rushes Creek Road, Rushes Creek, NSW** | February 2019 | N | **Figure 4 Site Contamination Delineation (0.6-0.8 metres)** |

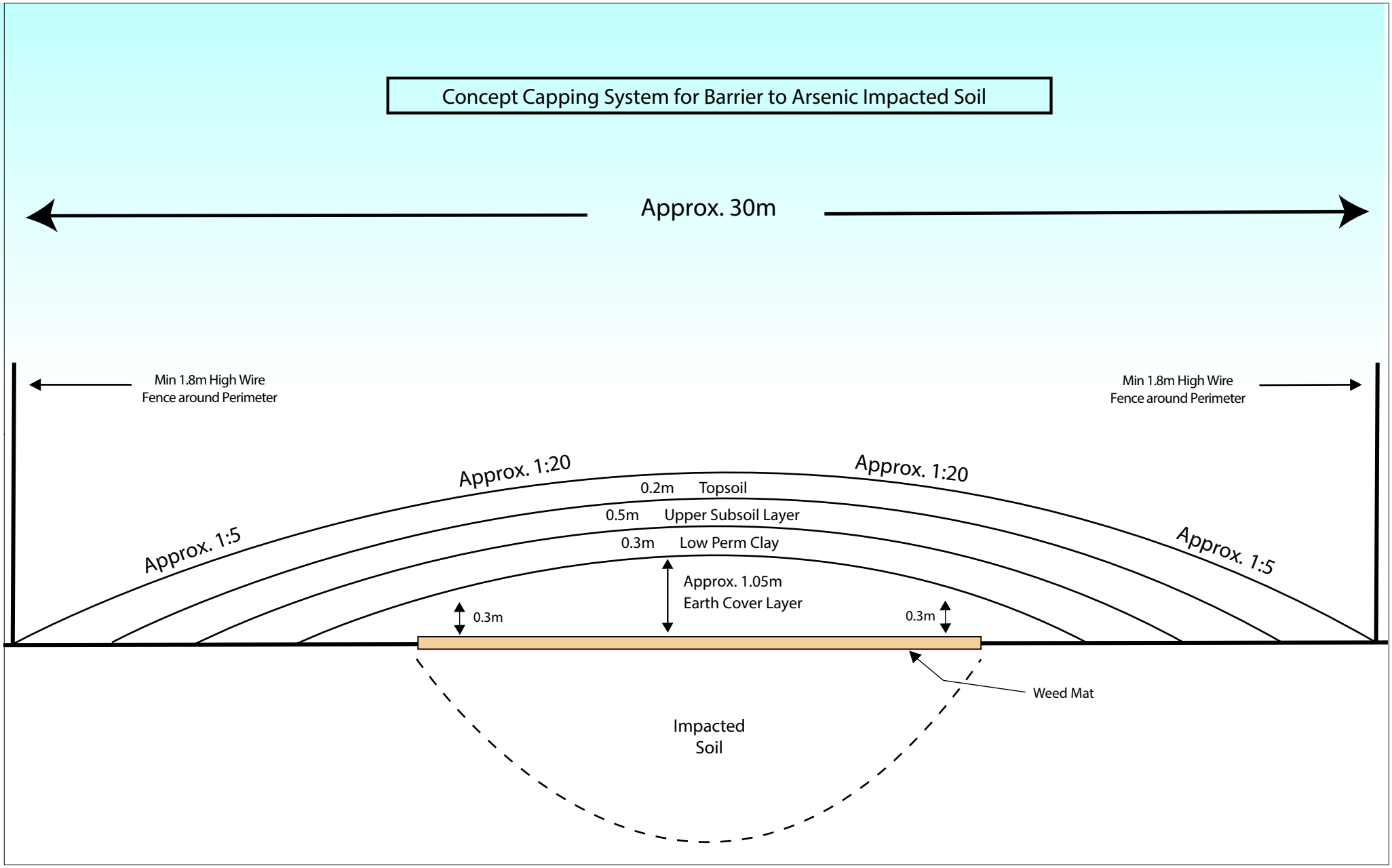
# Arsenic concentrations (mg/kg) at depth 0.9 metres to 1.3 metres


| | | | | | | |
|---|---|---|---|---|---|---|
| SLR | 2 Lincoln Street, Lane Cove, NSW 2066 Australia | T: +61 2 9428 8100 sydney@slrconsulting.com www.slrconsulting.com | **Remedial Action Plan** Ref: 610.18456.00100 | **Proposed Poultry Production Complex** **Rushes Creek Road, Rushes Creek, NSW** | February 2019 | N | **Figure 5 Site Contamination Delineation (0.9-1.3 metres)** |




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SLR | 202 Submarine School, Sub Base Platypus, North Sydney, NSW, 2060 | T: +61 2 9428 8100<br>sydney@slrconsulting.com<br>www.slrconsulting.com | **Ref**: 610.30237.00000<br>Proposed Poultry Production Complex<br>Rushes Creek Road, Rushes Creek, NSW | **Figure 6**<br>Site Locality Capping Extent | April 2021 | N | Prepared: JR 09/04/2021<br>Checked: JE 09/04/2021 |

# Concept Capping System for Barrier to Arsenic Impacted Soil




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SLR | 202 Submarine School, Sub Base Platypus, North Sydney, NSW, 2060 | T: +61 2 9428 8100<br>sydney@slrconsulting.com<br>www.slrconsulting.com | **Remedial Action Plan**<br>Ref: 610.30237.00000 | Proposed Poultry Production Complex<br>Rushes Creek Road, Rushes Creek, NSW | 09 April 2021 | North | Figure 7<br>Concept Capping System for Barrier to Arsenic Impacted Soil |

# APPENDIX B

Site Photographs

Photograph 1 –View of sheep holding shed

Photograph 2 – View of potential sheep dip

Photograph 3 – View of potential sheep dip with reference to sheep holding shed

Photograph 4 – View of test-pit

Photograph 5 – Backfilling of test-pit

Photograph 6 – View of shed near the sheep holding shed

Notes:

610.18456.00000 Soil Contamination Assessment

| | |
|---|---|
| Site: | RUSHES CREEK ROAD, RUSHES CREEK |
| Project: | REMEDIAL ACTION PLAN |
| Date: | FEBRUARY 2019 |
| Drawing: | **OBSERVATION PHOTOGRAPHS** — **Appendix B** |

Photograph 7 – View of sheep dip location beside sheep holding shed

Photograph 8 – View of sheep dip

Photograph 9 – Test-pit to the west of sheep dip with high Arsenic concentration

Photograph 10 – Excavator working on test-pit between sheep dip and sheep holding shed

Photograph 11 – Excavated soil from test-pit

Photograph 12 – View of location of former sheep dip beside sheep holding shed after backfilling

| | | | | |
|---|---|---|---|---|
| Notes: | | SLR<br>610.18456.00000 Soil Contamination Assessment | Site: | RUSHES CREEK ROAD, RUSHES CREEK |
| | | | Project: | REMEDIAL ACTION PLAN |
| | | | Date: | FEBRUARY 2019 |
| | | | Drawing: | **OBSERVATION PHOTOGRAPHS** — **Appendix B** |

# APPENDIX C

Detailed Site Investigation Test Pit Logs

# ENVIRONMENTAL BOREHOLE / TESTPIT TP01 (round 1)

| | | |
|---|---|---|
| **PROJECT NUMBER** 610.18456.00000 | **DRILLING DATE** 30/10/2018 | **COORDINATES** |
| **PROJECT NAME** ProTen Tamworth DSI | **DRILLING COMPANY** TPE Earthmoving & Civil | **COORD SYS** |
| **CLIENT** ProTen | **DRILLER** | **SURFACE ELEVATION** |
| **ADDRESS** Rushes Creek Road, Rushes Creek NSW | **DRILLING METHOD** Excavator | **LOGGED BY** Junaidi Ibrahim |
| | **TOTAL DEPTH** 1.5m | **CHECKED BY** Lachlan McWha |

**COMMENTS**

| Depth (m) | Samples | Is Analysed? | Graphic Log | Material Description | Additional Observations |
|---|---|---|---|---|---|
| | | | | TOPSOIL: (0.00 - 0.10 mBGL)<br>Dark brown, soft, dry, low plasticity, vegetation | |
| | TP01_0.2-0.4 | Y | | SILTY CLAY (0.10 - 0.40 mBGL)<br>Brown to red/brown, soft, dry, low plasticity | |
| 0.5 | TP01_0.5-0.6 | Y | | SILTY CLAY (0.40 - 0.60 mBGL)<br>Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-20mm) | |
| | | | | Shale: (0.60 - 1.50 mBGL)<br>Angular to sub-angular shale (20-80mm) | |
| 1 | TP01_1.3-1.5 | Y | | | |
| 1.5 | | | | Termination Depth at: 1.5m<br>Mechanical refusal on very shale bed | |

**Disclaimer** This log is intended for environmental not geotechnical purposes.



produced by ESlog.ESdat.net on 30 Jan 2019

# ENVIRONMENTAL BOREHOLE / TESTPIT TP02 (round 1)

| | | |
|---|---|---|
| **PROJECT NUMBER** 610.18456.00000 | **DRILLING DATE** 30/10/2018 | **COORDINATES** |
| **PROJECT NAME** ProTen Tamworth DSI | **DRILLING COMPANY** TPE Earthmoving & Civil | **COORD SYS** |
| **CLIENT** ProTen | **DRILLER** | **SURFACE ELEVATION** |
| **ADDRESS** Rushes Creek Road, Rushes Creek NSW | **DRILLING METHOD** Excavator | **LOGGED BY** Junaidi Ibrahim |
| | **TOTAL DEPTH** 1.0m | **CHECKED BY** Lachlan McWha |

**COMMENTS**

| Depth (m) | Samples | Is Analysed? | Graphic Log | Material Description | Additional Observations |
|---|---|---|---|---|---|
| | | | | TOPSOIL: (0.00 - 0.10 mBGL)<br>Dark brown, soft, dry, low plasticity, vegetation | |
| | TP02_0.2-0.3 | Y | | SILTY CLAY (0.10 - 0.30 mBGL)<br>Brown to red/brown, soft, dry, low plasticity | |
| | TP02_0.4-0.5 | Y | | SILTY CLAY (0.30 - 0.50 mBGL)<br>Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-20mm) | |
| 0.5 | TP02_0.9-1.0 | Y | | Shale: (0.50 - 1.0 mBGL)<br>Angular to sub-angular shale (20-80mm) | |
| 1 | | | | Termination Depth at: 1.0m<br>Mechanical refusal on very stiff shale bed | |

# ENVIRONMENTAL BOREHOLE / TESTPIT TP03 (round 1)

| | | |
|---|---|---|
| **PROJECT NUMBER** 610.18456.00000 | **DRILLING DATE** 30/10/2018 | **COORDINATES** |
| **PROJECT NAME** ProTen Tamworth DSI | **DRILLING COMPANY** TPE Earthmoving & Civil | **COORD SYS** |
| **CLIENT** ProTen | **DRILLER** | **SURFACE ELEVATION** |
| **ADDRESS** Rushes Creek Road, Rushes Creek NSW | **DRILLING METHOD** Excavator | **LOGGED BY** Junaidi Ibrahim |
| | **TOTAL DEPTH** 1.0m | **CHECKED BY** Lachlan McWha |

**COMMENTS**

| Depth (m) | Samples | Is Analysed? | Graphic Log | Material Description | Additional Observations |
|---|---|---|---|---|---|
| | | | | TOPSOIL: (0.00 - 0.10 mBGL)<br>Dark brown, soft, dry, low plasticity, vegetation | |
| | TP03_0.1-0.2 | Y | | SILTY CLAY (0.10 - 0.30 mBGL)<br>Brown to red/brown, soft, dry, low plasticity | |
| | | | | SILTY CLAY (0.30 - 0.50 mBGL)<br>Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (5-15mm) | |
| | TP03_0.4-0.5 | Y | | | |
| 0.5 | | | | Shale: (0.50 - 1.0 mBGL)<br>Angular to sub-angular shale (20-50mm) | |
| | TP03_0.9-1.0 | Y | | | |
| 1 | | | | Termination Depth at: 1.0m<br>Mechanical refusal on very stiff shale bed | |

# ENVIRONMENTAL BOREHOLE / TESTPIT TP04 (round 1)

| | | |
|---|---|---|
| **PROJECT NUMBER** 610.18456.00000 | **DRILLING DATE** 30/10/2018 | **COORDINATES** |
| **PROJECT NAME** ProTen Tamworth DSI | **DRILLING COMPANY** TPE Earthmoving & Civil | **COORD SYS** |
| **CLIENT** ProTen | **DRILLER** | **SURFACE ELEVATION** |
| **ADDRESS** Rushes Creek Road, Rushes Creek NSW | **DRILLING METHOD** Excavator | **LOGGED BY** Junaidi Ibrahim |
| | **TOTAL DEPTH** 0.20m | **CHECKED BY** Lachlan McWha |

**COMMENTS**

| Depth (m) | Samples | Is Analysed? | Graphic Log | Material Description | Additional Observations |
|---|---|---|---|---|---|
| | | | | TOPSOIL: (0.00 - 0.10 mBGL)<br>Dark brown, soft, dry, low plasticity, vegetation | |
| | TP04_0.1-0.2 | Y | | SILTY CLAY (0.10 - 0.20 mBGL)<br>Brown to red/brown, soft, dry, low plasticity | |
| 0.5 | | | | | |
| 1 | | | | | |

**Disclaimer** This log is intended for environmental not geotechnical purposes.



produced by ESlog.ESdat.net on 30 Jan 2019

# ENVIRONMENTAL BOREHOLE / TESTPIT TP01

| | | |
|---|---|---|
| **PROJECT NUMBER** 610.18456.00000 | **DRILLING DATE** 06/12/2018 | **COORDINATES** |
| **PROJECT NAME** ProTen Tamworth DSI | **DRILLING COMPANY** TPE Earthmoving & Civil | **COORD SYS** |
| **CLIENT** ProTen | **DRILLER** | **SURFACE ELEVATION** |
| **ADDRESS** Rushes Creek Road, Rushes Creek NSW | **DRILLING METHOD** Excavator | **LOGGED BY** Junaidi Ibrahim |
| | **TOTAL DEPTH** 1.3m | **CHECKED BY** Lachlan McWha |

**COMMENTS**

| Depth (m) | Samples | Is Analysed? | Graphic Log | Material Description | Additional Observations |
|---|---|---|---|---|---|
| | | | | TOPSOIL: (0.00 - 0.10 mBGL)<br>Dark brown, soft, dry, low plasticity, vegetation | |
| | TP01_0.2 | Y | | SILTY CLAY (0.10 - 0.40 mBGL)<br>Brown to red/brown, soft, dry, low plasticity | |
| 0.5 | TP01_0.7 | Y | | SILTY CLAY (0.40 - 0.60 mBGL)<br>Red/brown, stiff, dry, low plasticity, bits of angular to sub-angular shale (5-15mm) | |
| | | | | Shale: (0.60 - 1.20 mBGL)<br>Angular to sub-angular shale (20-40mm) | |
| 1 | TP01_1.2 | Y | | | |
| | | | | Termination Depth at: 1.3m<br>Mechanical refusal on very stiff shale | |

**Disclaimer** This log is intended for environmental not geotechnical purposes.

produced by ESlog.ESdat.net on 16 Jan 2019

# ENVIRONMENTAL BOREHOLE / TESTPIT TP02

| | | |
|---|---|---|
| **PROJECT NUMBER** 610.18456.00000 | **DRILLING DATE** 06/12/2018 | **COORDINATES** |
| **PROJECT NAME** ProTen Tamworth DSI | **DRILLING COMPANY** TPE Earthmoving & Civil | **COORD SYS** |
| **CLIENT** ProTen | **DRILLER** | **SURFACE ELEVATION** |
| **ADDRESS** Rushes Creek Road, Rushes Creek NSW | **DRILLING METHOD** Excavator | **LOGGED BY** Junaidi Ibrahim |
| | **TOTAL DEPTH** 1.3m | **CHECKED BY** Lachlan McWha |

**COMMENTS**

| Depth (m) | Samples | Is Analysed? | Graphic Log | Material Description | Additional Observations |
|---|---|---|---|---|---|
| | TP02_0.2 | Y | | TOPSOIL: (0.00 - 0.10 mBGL)<br>Dark brown, soft, dry, low plasticity, vegetation | |
| | | | | SILTY CLAY (0.10 - 0.40 mBGL)<br>Brown to red/brown, soft, dry, low plasticity | |
| 0.5 | TP02_0.7 | Y | | SILTY CLAY (0.40 - 0.70 mBGL)<br>Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-20mm) | |
| | | | | Shale: (0.70 - 1.3 mBGL)<br>Angular to sub-angular shale (20-40mm) | |
| 1 | TP02_1.2 | Y | | | |
| | | | | Termination Depth at: 1.3m<br>Mechanical refusal on very stiff shale | |

**Disclaimer** This log is intended for environmental not geotechnical purposes.

produced by ESlog.ESdat.net on 16 Jan 2019

# ENVIRONMENTAL BOREHOLE / TESTPIT TP03

| | | |
|---|---|---|
| **PROJECT NUMBER** 610.18456.00000 | **DRILLING DATE** 06/12/2018 | **COORDINATES** |
| **PROJECT NAME** ProTen Tamworth DSI | **DRILLING COMPANY** TPE Earthmoving & Civil | **COORD SYS** |
| **CLIENT** ProTen | **DRILLER** | **SURFACE ELEVATION** |
| **ADDRESS** Rushes Creek Road, Rushes Creek NSW | **DRILLING METHOD** Excavator | **LOGGED BY** Junaidi Ibrahim |
| | **TOTAL DEPTH** 1.2m | **CHECKED BY** Lachlan McWha |

**COMMENTS**

| Depth (m) | Samples | Is Analysed? | Graphic Log | Material Description | Additional Observations |
|---|---|---|---|---|---|
| | TP03_0.2 | Y | | TOPSOIL: (0.00 - 0.10 mBGL)<br>Dark brown, soft, dry, low plasticity, vegetation | |
| | | | | SILTY CLAY (0.10 - 0.40 mBGL)<br>Brown to red/brown, soft, dry, low plasticity | |
| 0.5 | TP03_0.6 | Y | | SILTY CLAY (0.40 - 0.60 mBGL)<br>Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-20mm) | |
| | | | | Shale: (0.60 - 1.2 mBGL)<br>Angular to sub-angular shale (20-50mm) | |
| 1 | TP03_1.1 | Y | | | |
| | | | | Termination Depth at: 1.2m<br>Mechanical refusal on very stiff shale | |

**Disclaimer** This log is intended for environmental not geotechnical purposes.

produced by ESlog.ESdat.net on 16 Jan 2019

# ENVIRONMENTAL BOREHOLE / TESTPIT TP04

| | | |
|---|---|---|
| **PROJECT NUMBER** 610.18456.00000 | **DRILLING DATE** 06/12/2018 | **COORDINATES** |
| **PROJECT NAME** ProTen Tamworth DSI | **DRILLING COMPANY** TPE Earthmoving & Civil | **COORD SYS** |
| **CLIENT** ProTen | **DRILLER** | **SURFACE ELEVATION** |
| **ADDRESS** Rushes Creek Road, Rushes Creek NSW | **DRILLING METHOD** Excavator | **LOGGED BY** Junaidi Ibrahim |
| | **TOTAL DEPTH** 1.2m | **CHECKED BY** Lachlan McWha |

**COMMENTS**

| Depth (m) | Samples | Is Analysed? | Graphic Log | Material Description | Additional Observations |
|---|---|---|---|---|---|
| | TP04_0.2 | Y | | TOPSOIL: (0.00 - 0.10 mBGL)<br>Dark brown, soft, dry, low plasticity, vegetation | |
| | | | | SILTY CLAY (0.10 - 0.40 mBGL)<br>Brown to red/brown, soft, dry, low plasticity | |
| 0.5 | TP04_0.7 | Y | | SILTY CLAY (0.40 - 0.70 mBGL)<br>Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-20mm) | |
| | TP04_1.1 | Y | | Shale: (0.70 - 1.2 mBGL)<br>Angular to sub-angular shale (20-50mm) | |
| 1 | | | | Termination Depth at: 1.2m<br>Mechanical refusal on very stiff shale | |

**Disclaimer** This log is intended for environmental not geotechnical purposes.

produced by ESlog.ESdat.net on 16 Jan 2019

# ENVIRONMENTAL BOREHOLE / TESTPIT TP05

| | | |
|---|---|---|
| **PROJECT NUMBER** 610.18456.00000 | **DRILLING DATE** 06/12/2018 | **COORDINATES** |
| **PROJECT NAME** ProTen Tamworth DSI | **DRILLING COMPANY** TPE Earthmoving & Civil | **COORD SYS** |
| **CLIENT** ProTen | **DRILLER** | **SURFACE ELEVATION** |
| **ADDRESS** Rushes Creek Road, Rushes Creek NSW | **DRILLING METHOD** Excavator | **LOGGED BY** Junaidi Ibrahim |
| | **TOTAL DEPTH** 1.2m | **CHECKED BY** Lachlan McWha |

**COMMENTS**

| Depth (m) | Samples | Is Analysed? | Graphic Log | Material Description | Additional Observations |
|---|---|---|---|---|---|
| | TP05_0.2 | Y | | TOPSOIL: (0.00 - 0.10 mBGL)<br>Dark brown, soft, dry, low plasticity, vegetation | |
| | | | | SILTY CLAY (0.10 - 0.30 mBGL)<br>Brown to red/brown, soft, dry, low plasticity | |
| 0.5 | TP05_0.6 | Y | | SILTY CLAY (0.30 - 0.60 mBGL)<br>Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-20mm) | |
| | | | | Shale: (0.60 - 1.2 mBGL)<br>Angular to sub-angular shale (20-30mm) | |
| 1 | TP05_1.1 | Y | | | |
| | | | | Termination Depth at: 1.2m<br>Mechanical refusal on very stiff shale | |

**Disclaimer** This log is intended for environmental not geotechnical purposes.

produced by ESlog.ESdat.net on 16 Jan 2019

# ENVIRONMENTAL BOREHOLE / TESTPIT TP06

| | | |
|---|---|---|
| **PROJECT NUMBER** 610.18456.00000 | **DRILLING DATE** 06/12/2018 | **COORDINATES** |
| **PROJECT NAME** ProTen Tamworth DSI | **DRILLING COMPANY** TPE Earthmoving & Civil | **COORD SYS** |
| **CLIENT** ProTen | **DRILLER** | **SURFACE ELEVATION** |
| **ADDRESS** Rushes Creek Road, Rushes Creek NSW | **DRILLING METHOD** Excavator | **LOGGED BY** Junaidi Ibrahim |
| | **TOTAL DEPTH** 1.2m | **CHECKED BY** Lachlan McWha |

**COMMENTS**

| Depth (m) | Samples | Is Analysed? | Graphic Log | Material Description | Additional Observations |
|---|---|---|---|---|---|
| | TP06_0.2 | Y | | TOPSOIL: (0.00 - 0.10 mBGL)<br>Dark brown, soft, dry, low plasticity, vegetation | |
| | | | | SILTY CLAY (0.10 - 0.30 mBGL)<br>Brown to red/brown, soft, dry, low plasticity | |
| 0.5 | TP06_0.6 | Y | | SILTY CLAY (0.30 - 0.60 mBGL)<br>Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (5-10mm) | |
| | | | | Shale: (0.60 - 1.2 mBGL)<br>Angular to sub-angular shale (15-30mm) | |
| 1 | TP06_1.1 | Y | | | |
| | | | | Termination Depth at: 1.2m<br>Mechanical refusal on very stiff shale | |

**Disclaimer** This log is intended for environmental not geotechnical purposes.

produced by ESlog.ESdat.net on 16 Jan 2019

# ENVIRONMENTAL BOREHOLE / TESTPIT TP07

| | | |
|---|---|---|
| **PROJECT NUMBER** 610.18456.00000 | **DRILLING DATE** 06/12/2018 | **COORDINATES** |
| **PROJECT NAME** ProTen Tamworth DSI | **DRILLING COMPANY** TPE Earthmoving & Civil | **COORD SYS** |
| **CLIENT** ProTen | **DRILLER** | **SURFACE ELEVATION** |
| **ADDRESS** Rushes Creek Road, Rushes Creek NSW | **DRILLING METHOD** Excavator | **LOGGED BY** Junaidi Ibrahim |
| | **TOTAL DEPTH** 1.2m | **CHECKED BY** Lachlan McWha |

**COMMENTS**

| Depth (m) | Samples | Is Analysed? | Graphic Log | Material Description | Additional Observations |
|---|---|---|---|---|---|
| | TP07_0.2 | Y | | TOPSOIL: (0.00 - 0.10 mBGL)<br>Dark brown, soft, dry, low plasticity, vegetation | |
| | | | | SILTY CLAY (0.10 - 0.30 mBGL)<br>Brown to red/brown, soft, dry, low plasticity | |
| 0.5 | TP07_0.6 | Y | | SILTY CLAY (0.30 - 0.60 mBGL)<br>Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (5-15mm) | |
| 1 | TP07_1.1 | Y | | Shale: (0.60 - 1.2 mBGL)<br>Angular to sub-angular shale (15-30mm) | |
| | | | | Termination Depth at: 1.2m<br>Mechanical refusal on very stiff shale | |

**Disclaimer** This log is intended for environmental not geotechnical purposes.

produced by ESlog.ESdat.net on 16 Jan 2019

# ENVIRONMENTAL BOREHOLE / TESTPIT TP08

| | | |
|---|---|---|
| **PROJECT NUMBER** 610.18456.00000 | **DRILLING DATE** 06/12/2018 | **COORDINATES** |
| **PROJECT NAME** ProTen Tamworth DSI | **DRILLING COMPANY** TPE Earthmoving & Civil | **COORD SYS** |
| **CLIENT** ProTen | **DRILLER** | **SURFACE ELEVATION** |
| **ADDRESS** Rushes Creek Road, Rushes Creek NSW | **DRILLING METHOD** Excavator | **LOGGED BY** Junaidi Ibrahim |
| | **TOTAL DEPTH** 1.1m | **CHECKED BY** Lachlan McWha |

**COMMENTS**

| Depth (m) | Samples | Is Analysed? | Graphic Log | Material Description | Additional Observations |
|---|---|---|---|---|---|
| | TP08_0.1 | Y | | TOPSOIL: (0.00 - 0.10 mBGL)<br>Dark brown, soft, dry, low plasticity, vegetation | |
| | | | | SILTY CLAY (0.10 - 0.30 mBGL)<br>Brown to red/brown, soft, dry, low plasticity | |
| | TP08_0.5 | Y | | SILTY CLAY (0.30 - 0.50 mBGL)<br>Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-20mm) | |
| 0.5 | | | | Shale: (0.50 - 1.1 mBGL)<br>Angular to sub-angular shale (20-30mm) | |
| 1 | TP08_1.0 | Y | | | |
| | | | | Termination Depth at: 1.1m<br>Mechanical refusal on very stiff shale | |

# ENVIRONMENTAL BOREHOLE / TESTPIT TP09

| | | |
|---|---|---|
| **PROJECT NUMBER** 610.18456.00000 | **DRILLING DATE** 06/12/2018 | **COORDINATES** |
| **PROJECT NAME** ProTen Tamworth DSI | **DRILLING COMPANY** TPE Earthmoving & Civil | **COORD SYS** |
| **CLIENT** ProTen | **DRILLER** | **SURFACE ELEVATION** |
| **ADDRESS** Rushes Creek Road, Rushes Creek NSW | **DRILLING METHOD** Excavator | **LOGGED BY** Junaidi Ibrahim |
| | **TOTAL DEPTH** 1.0m | **CHECKED BY** Lachlan McWha |

**COMMENTS**

| Depth (m) | Samples | Is Analysed? | Graphic Log | Material Description | Additional Observations |
|---|---|---|---|---|---|
| | TP09_0.1 | Y | | TOPSOIL: (0.00 - 0.10 mBGL)<br>Dark brown, soft, dry, low plasticity, vegetation | |
| | | | | SILTY CLAY (0.10 - 0.30 mBGL)<br>Brown to red/brown, soft, dry, low plasticity | |
| | TP09_0.5 | Y | | SILTY CLAY (0.30 - 0.50 mBGL)<br>Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-20mm) | |
| 0.5 | | | | Shale: (0.50 - 1.0 mBGL)<br>Angular to sub-angular shale (20-30mm) | |
| | TP09_0.9 | Y | | | |
| 1 | | | | Termination Depth at: 1.0m<br>Mechanical refusal on very stiff shale | |

**Disclaimer** This log is intended for environmental not geotechnical purposes.

produced by ESlog.ESdat.net on 16 Jan 2019

# ENVIRONMENTAL BOREHOLE / TESTPIT TP10

| | | |
|---|---|---|
| **PROJECT NUMBER** 610.18456.00000 | **DRILLING DATE** 06/12/2018 | **COORDINATES** |
| **PROJECT NAME** ProTen Tamworth DSI | **DRILLING COMPANY** TPE Earthmoving & Civil | **COORD SYS** |
| **CLIENT** ProTen | **DRILLER** | **SURFACE ELEVATION** |
| **ADDRESS** Rushes Creek Road, Rushes Creek NSW | **DRILLING METHOD** Excavator | **LOGGED BY** Junaidi Ibrahim |
| | **TOTAL DEPTH** 0.9m | **CHECKED BY** Lachlan McWha |

**COMMENTS**

| Depth (m) | Samples | Is Analysed? | Graphic Log | Material Description | Additional Observations |
|---|---|---|---|---|---|
| | TP10_0.1 | Y | | TOPSOIL: (0.00 - 0.10 mBGL)<br>Dark brown, soft, dry, low plasticity, vegetation | |
| | | | | SILTY CLAY (0.10 - 0.30 mBGL)<br>Brown to red/brown, soft, dry, low plasticity | |
| | TP10_0.4 | Y | | SILTY CLAY (0.30 - 0.40 mBGL)<br>Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-20mm) | |
| 0.5 | TP10_0.8 | Y | | Shale: (0.40 - 0.90 mBGL)<br>Angular to sub-angular shale (20-30mm) | |
| 1 | | | | Termination Depth at: 0.90m<br>Mechanical refusal on very stiff shale | |

**Disclaimer** This log is intended for environmental not geotechnical purposes.

# ENVIRONMENTAL BOREHOLE / TESTPIT TP11

| | | |
|---|---|---|
| **PROJECT NUMBER** 610.18456.00000 | **DRILLING DATE** 06/12/2018 | **COORDINATES** |
| **PROJECT NAME** ProTen Tamworth DSI | **DRILLING COMPANY** TPE Earthmoving & Civil | **COORD SYS** |
| **CLIENT** ProTen | **DRILLER** | **SURFACE ELEVATION** |
| **ADDRESS** Rushes Creek Road, Rushes Creek NSW | **DRILLING METHOD** Excavator | **LOGGED BY** Junaidi Ibrahim |
| | **TOTAL DEPTH** 1.2m | **CHECKED BY** Lachlan McWha |

**COMMENTS**

| Depth (m) | Samples | Is Analysed? | Graphic Log | Material Description | Additional Observations |
|---|---|---|---|---|---|
| | TP11_0.2 | Y | | TOPSOIL: (0.00 - 0.10 mBGL)<br>Dark brown, soft, dry, low plasticity, vegetation | |
| | | | | SILTY CLAY (0.10 - 0.30 mBGL)<br>Brown to red/brown, soft, dry, low plasticity | |
| 0.5 | TP11_0.6 | Y | | SILTY CLAY (0.30 - 0.60 mBGL)<br>Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (5-15mm) | |
| | | | | Shale: (0.60 - 1.2 mBGL)<br>Angular to sub-angular shale (10-30mm) | |
| 1 | TP11_1.1 | Y | | | |
| | | | | Termination Depth at: 1.2m<br>Mechanical refusal on very stiff shale | |

**Disclaimer** This log is intended for environmental not geotechnical purposes.

produced by ESlog.ESdat.net on 16 Jan 2019

# ENVIRONMENTAL BOREHOLE / TESTPIT TP12

| | | |
|---|---|---|
| **PROJECT NUMBER** 610.18456.00000 | **DRILLING DATE** 06/12/2018 | **COORDINATES** |
| **PROJECT NAME** ProTen Tamworth DSI | **DRILLING COMPANY** TPE Earthmoving & Civil | **COORD SYS** |
| **CLIENT** ProTen | **DRILLER** | **SURFACE ELEVATION** |
| **ADDRESS** Rushes Creek Road, Rushes Creek NSW | **DRILLING METHOD** Excavator | **LOGGED BY** Junaidi Ibrahim |
| | **TOTAL DEPTH** 1.2m | **CHECKED BY** Lachlan McWha |

**COMMENTS**

| Depth (m) | Samples | Is Analysed? | Graphic Log | Material Description | Additional Observations |
|---|---|---|---|---|---|
| | TP12_0.2 | Y | | TOPSOIL: (0.00 - 0.10 mBGL)<br>Dark brown, soft, dry, low plasticity, vegetation | |
| | | | | SILTY CLAY (0.10 - 0.30 mBGL)<br>Brown to red/brown, soft, dry, low plasticity | |
| 0.5 | TP12_0.6 | Y | | SILTY CLAY (0.30 - 0.60 mBGL)<br>Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-15mm) | |
| | TP12_1.1 | Y | | Shale: (0.60 - 1.2 mBGL)<br>Angular to sub-angular shale (10-30mm) | |
| 1 | | | | Termination Depth at: 1.2m<br>Mechanical refusal on very stiff shale | |

**Disclaimer** This log is intended for environmental not geotechnical purposes.

produced by ESlog.ESdat.net on 16 Jan 2019

# ENVIRONMENTAL BOREHOLE / TESTPIT TP13

| | | |
|---|---|---|
| **PROJECT NUMBER** 610.18456.00000 | **DRILLING DATE** 06/12/2018 | **COORDINATES** |
| **PROJECT NAME** ProTen Tamworth DSI | **DRILLING COMPANY** TPE Earthmoving & Civil | **COORD SYS** |
| **CLIENT** ProTen | **DRILLER** | **SURFACE ELEVATION** |
| **ADDRESS** Rushes Creek Road, Rushes Creek NSW | **DRILLING METHOD** Excavator | **LOGGED BY** Junaidi Ibrahim |
| | **TOTAL DEPTH** 1.1m | **CHECKED BY** Lachlan McWha |

**COMMENTS**

| Depth (m) | Samples | Is Analysed? | Graphic Log | Material Description | Additional Observations |
|---|---|---|---|---|---|
| | TP13_0.2 | Y | | TOPSOIL: (0.00 - 0.10 mBGL)<br>Dark brown, soft, dry, low plasticity, vegetation | |
| | | | | SILTY CLAY (0.10 - 0.30 mBGL)<br>Brown to red/brown, soft, dry, low plasticity | |
| 0.5 | TP13_0.6 | Y | | SILTY CLAY (0.30 - 0.60 mBGL)<br>Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-15mm) | |
| 1 | TP13_1.0 | Y | | Shale: (0.60 - 1.1 mBGL)<br>Angular to sub-angular shale (15-30mm) | |
| | | | | Termination Depth at: 1.1m<br>Mechanical refusal on very stiff shale | |

**Disclaimer** This log is intended for environmental not geotechnical purposes.

produced by ESlog.ESdat.net on 16 Jan 2019

# ENVIRONMENTAL BOREHOLE / TESTPIT TP14

| | | |
|---|---|---|
| **PROJECT NUMBER** 610.18456.00000 | **DRILLING DATE** 06/12/2018 | **COORDINATES** |
| **PROJECT NAME** ProTen Tamworth DSI | **DRILLING COMPANY** TPE Earthmoving & Civil | **COORD SYS** |
| **CLIENT** ProTen | **DRILLER** | **SURFACE ELEVATION** |
| **ADDRESS** Rushes Creek Road, Rushes Creek NSW | **DRILLING METHOD** Excavator | **LOGGED BY** Junaidi Ibrahim |
| | **TOTAL DEPTH** 1.2m | **CHECKED BY** Lachlan McWha |

**COMMENTS**

| Depth (m) | Samples | Is Analysed? | Graphic Log | Material Description | Additional Observations |
|---|---|---|---|---|---|
| | TP14_0.2 | Y | | TOPSOIL: (0.00 - 0.10 mBGL)<br>Dark brown, soft, dry, low plasticity, vegetation | |
| | | | | SILTY CLAY (0.10 - 0.30 mBGL)<br>Brown to red/brown, soft, dry, low plasticity | |
| 0.5 | TP14_0.6 | Y | | SILTY CLAY (0.30 - 0.60 mBGL)<br>Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-15mm) | |
| 1 | TP14_1.1 | Y | | Shale: (0.60 - 1.2 mBGL)<br>Angular to sub-angular shale (15-30mm) | |
| | | | | Termination Depth at: 1.2m<br>Mechanical refusal on very stiff shale | |

**Disclaimer** This log is intended for environmental not geotechnical purposes.

produced by ESlog.ESdat.net on 16 Jan 2019

# ENVIRONMENTAL BOREHOLE / TESTPIT TP15

| | | |
|---|---|---|
| **PROJECT NUMBER** 610.18456.00000 | **DRILLING DATE** 06/12/2018 | **COORDINATES** |
| **PROJECT NAME** ProTen Tamworth DSI | **DRILLING COMPANY** TPE Earthmoving & Civil | **COORD SYS** |
| **CLIENT** ProTen | **DRILLER** | **SURFACE ELEVATION** |
| **ADDRESS** Rushes Creek Road, Rushes Creek NSW | **DRILLING METHOD** Excavator | **LOGGED BY** Junaidi Ibrahim |
| | **TOTAL DEPTH** 1.3m | **CHECKED BY** Lachlan McWha |

**COMMENTS**

| Depth (m) | Samples | Is Analysed? | Graphic Log | Material Description | Additional Observations |
|---|---|---|---|---|---|
| | | | | TOPSOIL: (0.00 - 0.10 mBGL)<br>Dark brown, soft, dry, low plasticity, vegetation | |
| | TP15_0.2 | Y | | SILTY CLAY (0.10 - 0.40 mBGL)<br>Brown to red/brown, soft, dry, low plasticity | |
| 0.5 | TP15_0.7 | Y | | SILTY CLAY (0.40 - 0.70 mBGL)<br>Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-20mm) | |
| | | | | Shale: (0.70 - 1.3 mBGL)<br>Angular to sub-angular shale (20-40mm) | |
| 1 | TP15_1.2 | Y | | | |
| | | | | Termination Depth at: 1.3m<br>Mechanical refusal on very stiff shale | |

**Disclaimer** This log is intended for environmental not geotechnical purposes.

produced by ESlog.ESdat.net on 16 Jan 2019

# ENVIRONMENTAL BOREHOLE / TESTPIT TP16

| | | |
|---|---|---|
| **PROJECT NUMBER** 610.18456.00000 | **DRILLING DATE** 06/12/2018 | **COORDINATES** |
| **PROJECT NAME** ProTen Tamworth DSI | **DRILLING COMPANY** TPE Earthmoving & Civil | **COORD SYS** |
| **CLIENT** ProTen | **DRILLER** | **SURFACE ELEVATION** |
| **ADDRESS** Rushes Creek Road, Rushes Creek NSW | **DRILLING METHOD** Excavator | **LOGGED BY** Junaidi Ibrahim |
| | **TOTAL DEPTH** 1.2m | **CHECKED BY** Lachlan McWha |

**COMMENTS**

| Depth (m) | Samples | Is Analysed? | Graphic Log | Material Description | Additional Observations |
|---|---|---|---|---|---|
| | TP16_0.2 | Y | | TOPSOIL: (0.00 - 0.10 mBGL)<br>Dark brown, soft, dry, low plasticity, vegetation | |
| | | | | SILTY CLAY (0.10 - 0.40 mBGL)<br>Brown to red/brown, soft, dry, low plasticity | |
| 0.5 | TP16_0.6 | Y | | SILTY CLAY (0.40 - 0.60 mBGL)<br>Red/brown, stiff, dry, low plasticity, bits of angular to sub-angular shale (5-15mm) | |
| | | | | Shale: (0.60 - 1.20 mBGL)<br>Angular to sub-angular shale (20-40mm) | |
| 1 | TP16_1.1 | Y | | | |
| | | | | Termination Depth at: 1.2m<br>Mechanical refusal on very stiff shale | |

**Disclaimer** This log is intended for environmental not geotechnical purposes.

produced by ESlog.ESdat.net on 16 Jan 2019

# ENVIRONMENTAL BOREHOLE / TESTPIT TP17

| | | |
|---|---|---|
| **PROJECT NUMBER** 610.18456.00000 | **DRILLING DATE** 06/12/2018 | **COORDINATES** |
| **PROJECT NAME** ProTen Tamworth DSI | **DRILLING COMPANY** TPE Earthmoving & Civil | **COORD SYS** |
| **CLIENT** ProTen | **DRILLER** | **SURFACE ELEVATION** |
| **ADDRESS** Rushes Creek Road, Rushes Creek NSW | **DRILLING METHOD** Excavator | **LOGGED BY** Junaidi Ibrahim |
| | **TOTAL DEPTH** 1.3m | **CHECKED BY** Lachlan McWha |

**COMMENTS**

| Depth (m) | Samples | Is Analysed? | Graphic Log | Material Description | Additional Observations |
|---|---|---|---|---|---|
| | TP17_0.1 | Y | | TOPSOIL: (0.00 - 0.10 mBGL)<br>Dark brown, soft, dry, low plasticity, vegetation | |
| | | | | SILTY CLAY (0.10 - 0.40 mBGL)<br>Brown to red/brown, soft, dry, low plasticity | |
| 0.5 | TP17_0.8 | Y | | SILTY CLAY (0.40 - 0.80 mBGL)<br>Red/brown, stiff, dry, low plasticity, bits of angular to sub-angular shale (5-15mm) | |
| | | | | Shale: (0.80 - 1.30 mBGL)<br>Angular to sub-angular shale (20-40mm) | |
| 1 | TP17_1.2 | Y | | | |
| | | | | Termination Depth at: 1.3m<br>Mechanical refusal on very stiff shale | |

**Disclaimer** This log is intended for environmental not geotechnical purposes.

produced by ESlog.ESdat.net on 16 Jan 2019

# APPENDIX D

Laboratory Reports

# Certificate of Analysis

**SLR Consulting**
**2 Lincoln St**
**Lane Cove West**
**NSW 2066**



**Attention:** **Junaidi Ibrahim**

**Report** **625300-S**
Project name DSI PROTEN TAMWORTH
Project ID 610.18456
Received Date Oct 31, 2018

| **Client Sample ID** | | | **TP01_0.2-0.4** | **TP01_0.5-0.6** | **TP02_0.2-0.3** | **TP02_0.4-0.5** |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins \| mgt Sample No.** | | | **S18-Oc38411** | **S18-Oc38412** | **S18-Oc38413** | **S18-Oc38414** |
| **Date Sampled** | | | **Oct 30, 2018** | **Oct 30, 2018** | **Oct 30, 2018** | **Oct 30, 2018** |
| Test/Reference | LOR | Unit | | | | |
| **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 |
| Aldrin and Dieldrin (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| DDT + DDE + DDD (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Vic EPA IWRG 621 OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Dibutylchlorendate (surr.) | 1 | % | 119 | 111 | 123 | 111 |
| Tetrachloro-m-xylene (surr.) | 1 | % | 114 | 100 | 105 | 101 |
| **Organophosphorus Pesticides** | | | | | | |
| Azinphos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Bolstar | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chlorfenvinphos | 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 |
| Chlorpyrifos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Coumaphos | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Demeton-S | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |

| Client Sample ID | | | TP01_0.2-0.4 | TP01_0.5-0.6 | TP02_0.2-0.3 | TP02_0.4-0.5 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins \| mgt Sample No. | | | S18-Oc38411 | S18-Oc38412 | S18-Oc38413 | S18-Oc38414 |
| Date Sampled | | | Oct 30, 2018 | Oct 30, 2018 | Oct 30, 2018 | Oct 30, 2018 |
| Test/Reference | LOR | Unit | | | | |
| **Organophosphorus Pesticides** | | | | | | |
| 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 |
| Dimethoate | 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 |
| EPN | 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 |
| Ethyl parathion | 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 |
| Malathion | 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 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 |
| Monocrotophos | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Naled | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Omethoate | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Phorate | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Pirimiphos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Pyrazophos | 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 |
| Terbufos | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Tetrachlorvinphos | 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 | % | 72 | 97 | 75 | 95 |
| **Triazines** | | | | | | |
| Ametryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Atraton | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Atrazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Prometon | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Prometryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Propazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Simazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Simetryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Terbuthylazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Terbutryne | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| **Carbamate Pesticides** | | | | | | |
| Aldicarb | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Bendiocarb | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Carbaryl | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Carbofuran | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Methomyl | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Oxamyl | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Thiobencarb | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |

| Client Sample ID | | | TP01_0.2-0.4 | TP01_0.5-0.6 | TP02_0.2-0.3 | TP02_0.4-0.5 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins \| mgt Sample No. | | | S18-Oc38411 | S18-Oc38412 | S18-Oc38413 | S18-Oc38414 |
| Date Sampled | | | Oct 30, 2018 | Oct 30, 2018 | Oct 30, 2018 | Oct 30, 2018 |
| Test/Reference | LOR | Unit | | | | |
| **Synthetic Pyrethroids*** | | | | | | |
| Allethrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Cyfluthrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Cypermethrin (total)* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Fenvalerate* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Permethrin | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Phenothrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Resmethrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Tetramethrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 14 | 9.7 | 28 | 9.9 |
| Cadmium | 0.4 | mg/kg | < 0.4 | < 0.4 | < 0.4 | < 0.4 |
| Chromium | 5 | mg/kg | 19 | 11 | 19 | 18 |
| Copper | 5 | mg/kg | 60 | 44 | 67 | 68 |
| Lead | 5 | mg/kg | 15 | 11 | 17 | 14 |
| Mercury | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Nickel | 5 | mg/kg | 22 | 14 | 22 | 23 |
| Zinc | 5 | mg/kg | 80 | 70 | 91 | 100 |
| | | | | | | |
| % Moisture | 1 | % | 18 | 7.4 | 16 | 12 |

| Client Sample ID | | | TP02_0.9-1.0 | TP03_0.1-0.2 | TP03_0.4-0.5 | TP03_0.9-1.0 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins \| mgt Sample No. | | | S18-Oc38415 | S18-Oc38416 | S18-Oc38417 | S18-Oc38418 |
| Date Sampled | | | Oct 30, 2018 | Oct 30, 2018 | Oct 30, 2018 | Oct 30, 2018 |
| Test/Reference | LOR | Unit | | | | |
| **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 |
| Aldrin and Dieldrin (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |

| Client Sample ID | | | TP02_0.9-1.0 | TP03_0.1-0.2 | TP03_0.4-0.5 | TP03_0.9-1.0 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins \| mgt Sample No. | | | S18-Oc38415 | S18-Oc38416 | S18-Oc38417 | S18-Oc38418 |
| Date Sampled | | | Oct 30, 2018 | Oct 30, 2018 | Oct 30, 2018 | Oct 30, 2018 |
| Test/Reference | LOR | Unit | | | | |
| **Organochlorine Pesticides** | | | | | | |
| DDT + DDE + DDD (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Vic EPA IWRG 621 OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Dibutylchlorendate (surr.) | 1 | % | 90 | 125 | 115 | 135 |
| Tetrachloro-m-xylene (surr.) | 1 | % | 84 | 110 | 101 | 122 |
| **Organophosphorus Pesticides** | | | | | | |
| Azinphos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Bolstar | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chlorfenvinphos | 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 |
| Chlorpyrifos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Coumaphos | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Demeton-S | 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 |
| Dimethoate | 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 |
| EPN | 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 |
| Ethyl parathion | 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 |
| Malathion | 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 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 |
| Monocrotophos | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Naled | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Omethoate | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Phorate | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Pirimiphos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Pyrazophos | 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 |
| Terbufos | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Tetrachlorvinphos | 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 | % | 91 | 84 | 89 | 78 |
| **Triazines** | | | | | | |
| Ametryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Atraton | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Atrazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Prometon | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Prometryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Propazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Simazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |

| Client Sample ID | | | TP02_0.9-1.0 | TP03_0.1-0.2 | TP03_0.4-0.5 | TP03_0.9-1.0 |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins \| mgt Sample No.** | | | **S18-Oc38415** | **S18-Oc38416** | **S18-Oc38417** | **S18-Oc38418** |
| **Date Sampled** | | | **Oct 30, 2018** | **Oct 30, 2018** | **Oct 30, 2018** | **Oct 30, 2018** |
| Test/Reference | LOR | Unit | | | | |
| **Triazines** | | | | | | |
| Simetryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Terbuthylazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Terbutryne | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| **Carbamate Pesticides** | | | | | | |
| Aldicarb | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Bendiocarb | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Carbaryl | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Carbofuran | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Methomyl | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Oxamyl | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Thiobencarb | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| **Synthetic Pyrethroids*** | | | | | | |
| Allethrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Cyfluthrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Cypermethrin (total)* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Fenvalerate* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Permethrin | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Phenothrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Resmethrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Tetramethrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 2.2 | 14 | 6.2 | 8.3 |
| Cadmium | 0.4 | mg/kg | < 0.4 | < 0.4 | < 0.4 | < 0.4 |
| Chromium | 5 | mg/kg | < 5 | 17 | 10 | 12 |
| Copper | 5 | mg/kg | 21 | 52 | 42 | 52 |
| Lead | 5 | mg/kg | 5.0 | 14 | 10 | 11 |
| Mercury | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Nickel | 5 | mg/kg | 7.2 | 18 | 13 | 15 |
| Zinc | 5 | mg/kg | 35 | 70 | 68 | 81 |
| | | | | | | |
| % Moisture | 1 | % | 5.6 | 16 | 10 | 7.8 |

| Client Sample ID | | | TP04_0.1-0.2 | QC1 | TP01_1.3-1.5 |
|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** |
| **Eurofins \| mgt Sample No.** | | | **S18-Oc38419** | **S18-Oc38420** | **S18-Oc38429** |
| **Date Sampled** | | | **Oct 30, 2018** | **Oct 30, 2018** | **Oct 30, 2018** |
| Test/Reference | LOR | Unit | | | |
| **Organochlorine Pesticides** | | | | | |
| Chlordanes - Total | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 |
| 4.4'-DDD | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 |
| 4.4'-DDE | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 |
| 4.4'-DDT | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 |
| a-BHC | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 |
| Aldrin | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 |
| b-BHC | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 |
| d-BHC | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 |
| Dieldrin | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 |
| Endosulfan I | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 |

| Client Sample ID | | | TP04_0.1-0.2 | QC1 | TP01_1.3-1.5 |
|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil |
| Eurofins \| mgt Sample No. | | | S18-Oc38419 | S18-Oc38420 | S18-Oc38429 |
| Date Sampled | | | Oct 30, 2018 | Oct 30, 2018 | Oct 30, 2018 |
| Test/Reference | LOR | Unit | | | |
| **Organochlorine Pesticides** | | | | | |
| 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 |
| Aldrin and Dieldrin (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 |
| DDT + DDE + DDD (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 |
| Vic EPA IWRG 621 OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 |
| Dibutylchlorendate (surr.) | 1 | % | 135 | 141 | 113 |
| Tetrachloro-m-xylene (surr.) | 1 | % | 117 | 129 | 103 |
| **Organophosphorus Pesticides** | | | | | |
| Azinphos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 |
| Bolstar | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 |
| Chlorfenvinphos | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 |
| Chlorpyrifos | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 |
| Chlorpyrifos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 |
| Coumaphos | 2 | mg/kg | < 2 | < 2 | < 2 |
| Demeton-S | 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 |
| Dimethoate | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 |
| Disulfoton | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 |
| EPN | 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 |
| Ethyl parathion | 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 |
| Malathion | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 |
| Merphos | 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 |
| Monocrotophos | 2 | mg/kg | < 2 | < 2 | < 2 |
| Naled | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 |
| Omethoate | 2 | mg/kg | < 2 | < 2 | < 2 |
| Phorate | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 |
| Pirimiphos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 |
| Pyrazophos | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 |
| Ronnel | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 |
| Terbufos | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 |

| Client Sample ID | | | TP04_0.1-0.2 | QC1 | TP01_1.3-1.5 |
|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil |
| Eurofins \| mgt Sample No. | | | S18-Oc38419 | S18-Oc38420 | S18-Oc38429 |
| Date Sampled | | | Oct 30, 2018 | Oct 30, 2018 | Oct 30, 2018 |
| Test/Reference | LOR | Unit | | | |
| **Organophosphorus Pesticides** | | | | | |
| Tetrachlorvinphos | 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 | % | 94 | 82 | 80 |
| **Triazines** | | | | | |
| Ametryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 |
| Atraton | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 |
| Atrazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 |
| Prometon | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 |
| Prometryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 |
| Propazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 |
| Simazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 |
| Simetryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 |
| Terbuthylazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 |
| Terbutryne | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 |
| **Carbamate Pesticides** | | | | | |
| Aldicarb | 2 | mg/kg | < 2 | < 2 | < 2 |
| Bendiocarb | 2 | mg/kg | < 2 | < 2 | < 2 |
| Carbaryl | 2 | mg/kg | < 2 | < 2 | < 2 |
| Carbofuran | 2 | mg/kg | < 2 | < 2 | < 2 |
| Methomyl | 2 | mg/kg | < 2 | < 2 | < 2 |
| Oxamyl | 2 | mg/kg | < 2 | < 2 | < 2 |
| Thiobencarb | 2 | mg/kg | < 2 | < 2 | < 2 |
| **Synthetic Pyrethroids*** | | | | | |
| Allethrin* | 2 | mg/kg | < 2 | < 2 | < 2 |
| Cyfluthrin* | 2 | mg/kg | < 2 | < 2 | < 2 |
| Cypermethrin (total)* | 2 | mg/kg | < 2 | < 2 | < 2 |
| Fenvalerate* | 2 | mg/kg | < 2 | < 2 | < 2 |
| Permethrin | 2 | mg/kg | < 2 | < 2 | < 2 |
| Phenothrin* | 2 | mg/kg | < 2 | < 2 | < 2 |
| Resmethrin* | 2 | mg/kg | < 2 | < 2 | < 2 |
| Tetramethrin* | 2 | mg/kg | < 2 | < 2 | < 2 |
| **Heavy Metals** | | | | | |
| Arsenic | 2 | mg/kg | 2600 | 17 | 7.4 |
| Cadmium | 0.4 | mg/kg | < 0.4 | < 0.4 | < 0.4 |
| Chromium | 5 | mg/kg | 17 | 20 | 11 |
| Copper | 5 | mg/kg | 55 | 67 | 49 |
| Lead | 5 | mg/kg | 25 | 16 | 12 |
| Mercury | 0.1 | mg/kg | 0.2 | < 0.1 | < 0.1 |
| Nickel | 5 | mg/kg | 14 | 23 | 15 |
| Zinc | 5 | mg/kg | 270 | 96 | 80 |
| | | | | | |
| % Moisture | 1 | % | 18 | 16 | 5.7 |

## Sample History

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

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

| Description | Testing Site | Extracted | Holding Time |
|---|---|---|---|
| Eurofins \| mgt Suite B14 | | | |
| Organochlorine Pesticides | Melbourne | Nov 02, 2018 | 14 Day |
| - Method: LTM-ORG-2220 OCP & PCB in Soil and Water | | | |
| Organophosphorus Pesticides | Melbourne | Nov 02, 2018 | 14 Day |
| - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS | | | |
| Triazines | Melbourne | Nov 02, 2018 | 14 Day |
| - Method: LTM-ORG-2080 | | | |
| Carbamate Pesticides | Melbourne | Nov 02, 2018 | 14 Day |
| - Method: LTM-ORG-2290 Carbamates in waters and soils by HPLC | | | |
| Synthetic Pyrethroids* | Melbourne | Nov 02, 2018 | 14 Day |
| - Method: LTM-ORG-2170 Synthetic Pyrethroids by HPLC-UV | | | |
| Metals M8 | Melbourne | Nov 02, 2018 | 28 Days |
| - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS | | | |
| % Moisture | Melbourne | Oct 31, 2018 | 14 Day |
| - Method: LTM-GEN-7080 Moisture | | | |

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

**Melbourne**
2-5 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

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

**Company Name:** SLR Consulting (Sydney)
**Address:** 2 Lincoln St
Lane Cove West
NSW 2066

**Project Name:** DSI PROTEN TAMWORTH
**Project ID:** 610.18456

**Order No.:**
**Report #:** 625300
**Phone:** 02 9428 8100
**Fax:**

**Received:** Oct 31, 2018 9:45 AM
**Due:** Nov 7, 2018
**Priority:** 5 Day
**Contact Name:** Junaidi Ibrahim

**Eurofins | mgt Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | HOLD | HOLD | Triazines | Carbamate Pesticides | Synthetic Pyrethroids* | Metals M8 | Eurofins \| mgt Suite B14 | Moisture Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | X | | X | X | X | X | X | X |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | X | | | | | | |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | | | | | | | |
| 1 | TP01_0.2-0.4 | Oct 30, 2018 | | Soil | S18-Oc38411 | | | X | X | X | X | X | X |
| 2 | TP01_0.5-0.6 | Oct 30, 2018 | | Soil | S18-Oc38412 | | | X | X | X | X | X | X |
| 3 | TP02_0.2-0.3 | Oct 30, 2018 | | Soil | S18-Oc38413 | | | X | X | X | X | X | X |
| 4 | TP02_0.4-0.5 | Oct 30, 2018 | | Soil | S18-Oc38414 | | | X | X | X | X | X | X |
| 5 | TP02_0.9-1.0 | Oct 30, 2018 | | Soil | S18-Oc38415 | | | X | X | X | X | X | X |
| 6 | TP03_0.1-0.2 | Oct 30, 2018 | | Soil | S18-Oc38416 | | | X | X | X | X | X | X |
| 7 | TP03_0.4-0.5 | Oct 30, 2018 | | Soil | S18-Oc38417 | | | X | X | X | X | X | X |
| 8 | TP03_0.9-1.0 | Oct 30, 2018 | | Soil | S18-Oc38418 | | | X | X | X | X | X | X |
| 9 | TP04_0.1-0.2 | Oct 30, 2018 | | Soil | S18-Oc38419 | | | X | X | X | X | X | X |

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

**Melbourne**
2-5 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

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

**Company Name:** SLR Consulting (Sydney)
**Address:** 2 Lincoln St
Lane Cove West
NSW 2066

**Project Name:** DSI PROTEN TAMWORTH
**Project ID:** 610.18456

**Order No.:**
**Report #:** 625300
**Phone:** 02 9428 8100
**Fax:**

**Received:** Oct 31, 2018 9:45 AM
**Due:** Nov 7, 2018
**Priority:** 5 Day
**Contact Name:** Junaidi Ibrahim

**Eurofins | mgt Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | HOLD | HOLD | Triazines | Carbamate Pesticides | Synthetic Pyrethroids* | Metals M8 | Eurofins \| mgt Suite B14 | Moisture Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | X | | X | X | X | X | X | X |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | X | | | | | | |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | | |
| 10 | QC1 | Oct 30, 2018 | | Soil | S18-Oc38420 | | | X | X | X | X | X | X |
| 11 | R01 | Oct 30, 2018 | | Water | S18-Oc38421 | | | X | X | X | X | X | |
| 12 | TS | Oct 30, 2018 | | Water | S18-Oc38422 | X | | | | | | | |
| 13 | TB | Oct 30, 2018 | | Water | S18-Oc38423 | X | | | | | | | |
| 14 | TS | Oct 30, 2018 | | Soil | S18-Oc38424 | | X | | | | | | |
| 15 | TB | Oct 30, 2018 | | Soil | S18-Oc38425 | | X | | | | | | |
| 16 | LAB SPIKE | Oct 30, 2018 | | Soil | S18-Oc38426 | | X | | | | | | |
| 17 | TP01_1.3-1.5 | Oct 30, 2018 | | Soil | S18-Oc38429 | | | X | X | X | X | X | X |
| **Test Counts** | | | | | | 5 | 5 | 12 | 12 | 12 | 12 | 12 | 11 |

## 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. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

### Holding Times

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

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

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

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

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

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

### Units

**mg/kg:** milligrams per kilogram

**mg/L:** milligrams per litre

**ug/L:** micrograms per litre

**ppm:** Parts per million

**ppb:** Parts per billion

**%:** Percentage

**org/100mL:** Organisms per 100 millilitres

**NTU:** Nephelometric Turbidity Units

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

### Terms

| | |
|---|---|
| **Dry** | Where a moisture has been determined on a solid sample the result is expressed on a dry basis. |
| **LOR** | Limit of Reporting. |
| **SPIKE** | Addition of the analyte to the sample and reported as percentage recovery. |
| **RPD** | Relative Percent Difference between two Duplicate pieces of analysis. |
| **LCS** | Laboratory Control Sample - reported as percent recovery. |
| **CRM** | Certified Reference Material - reported as percent recovery. |
| **Method Blank** | In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water. |
| **Surr - Surrogate** | The addition of a like compound to the analyte target and reported as percentage recovery. |
| **Duplicate** | A second piece of analysis from the same sample and reported in the same units as the result to show comparison. |
| **USEPA** | United States Environmental Protection Agency |
| **APHA** | American Public Health Association |
| **TCLP** | Toxicity Characteristic Leaching Procedure |
| **COC** | Chain of Custody |
| **SRA** | Sample Receipt Advice |
| **QSM** | Quality Systems Manual ver 5.1 US Department of Defense |
| **CP** | Client Parent - QC was performed on samples pertaining to this report |
| **NCP** | Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within. |
| **TEQ** | Toxic Equivalency Quotient |

### QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

### QC Data General Comments

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

**Quality Control Results**

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| **Method Blank** | | | | | | | |
| **Organochlorine Pesticides** | | | | | | | |
| Chlordanes - Total | mg/kg | < 0.1 | | | 0.1 | Pass | |
| 4.4'-DDD | mg/kg | < 0.05 | | | 0.05 | Pass | |
| 4.4'-DDE | mg/kg | < 0.05 | | | 0.05 | Pass | |
| 4.4'-DDT | mg/kg | < 0.05 | | | 0.05 | Pass | |
| a-BHC | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Aldrin | mg/kg | < 0.05 | | | 0.05 | Pass | |
| b-BHC | mg/kg | < 0.05 | | | 0.05 | Pass | |
| d-BHC | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Dieldrin | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endosulfan I | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endosulfan II | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endosulfan sulphate | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endrin | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endrin aldehyde | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endrin ketone | mg/kg | < 0.05 | | | 0.05 | Pass | |
| g-BHC (Lindane) | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Heptachlor | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Heptachlor epoxide | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Hexachlorobenzene | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Methoxychlor | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Toxaphene | mg/kg | < 1 | | | 1 | Pass | |
| **Method Blank** | | | | | | | |
| **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 | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| 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** | | | | | | | |
| **Triazines** | | | | | | | |
| Ametryn | mg/kg | < 0.2 | | | 0.2 | Pass | |
| Atraton | mg/kg | < 0.2 | | | 0.2 | Pass | |
| Atrazine | mg/kg | < 0.2 | | | 0.2 | Pass | |
| Prometon | mg/kg | < 0.2 | | | 0.2 | Pass | |
| Prometryn | mg/kg | < 0.2 | | | 0.2 | Pass | |
| Propazine | mg/kg | < 0.2 | | | 0.2 | Pass | |
| Simazine | mg/kg | < 0.2 | | | 0.2 | Pass | |
| Simetryn | mg/kg | < 0.2 | | | 0.2 | Pass | |
| Terbuthylazine | mg/kg | < 0.2 | | | 0.2 | Pass | |
| Terbutryne | mg/kg | < 0.2 | | | 0.2 | Pass | |
| **Method Blank** | | | | | | | |
| **Carbamate Pesticides** | | | | | | | |
| Aldicarb | mg/kg | < 2 | | | 2 | Pass | |
| Bendiocarb | mg/kg | < 2 | | | 2 | Pass | |
| Carbaryl | mg/kg | < 2 | | | 2 | Pass | |
| Carbofuran | mg/kg | < 2 | | | 2 | Pass | |
| Methomyl | mg/kg | < 2 | | | 2 | Pass | |
| Oxamyl | mg/kg | < 2 | | | 2 | Pass | |
| Thiobencarb | mg/kg | < 2 | | | 2 | Pass | |
| **Method Blank** | | | | | | | |
| **Synthetic Pyrethroids*** | | | | | | | |
| Allethrin* | mg/kg | < 2 | | | 2 | Pass | |
| Cyfluthrin* | mg/kg | < 2 | | | 2 | Pass | |
| Cypermethrin (total)* | mg/kg | < 2 | | | 2 | Pass | |
| Fenvalerate* | mg/kg | < 2 | | | 2 | Pass | |
| Permethrin | mg/kg | < 2 | | | 2 | Pass | |
| Phenothrin* | mg/kg | < 2 | | | 2 | Pass | |
| Resmethrin* | mg/kg | < 2 | | | 2 | Pass | |
| Tetramethrin* | mg/kg | < 2 | | | 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** | | | | | | | |
| **Organochlorine Pesticides** | | | | | | | |
| 4.4'-DDD | % | 119 | | | 70-130 | Pass | |
| 4.4'-DDE | % | 117 | | | 70-130 | Pass | |
| 4.4'-DDT | % | 129 | | | 70-130 | Pass | |
| a-BHC | % | 99 | | | 70-130 | Pass | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| Aldrin | % | 110 | | | 70-130 | Pass | |
| b-BHC | % | 98 | | | 70-130 | Pass | |
| d-BHC | % | 101 | | | 70-130 | Pass | |
| Dieldrin | % | 114 | | | 70-130 | Pass | |
| Endosulfan I | % | 111 | | | 70-130 | Pass | |
| Endosulfan II | % | 114 | | | 70-130 | Pass | |
| Endosulfan sulphate | % | 110 | | | 70-130 | Pass | |
| Endrin | % | 125 | | | 70-130 | Pass | |
| Endrin aldehyde | % | 115 | | | 70-130 | Pass | |
| Endrin ketone | % | 116 | | | 70-130 | Pass | |
| g-BHC (Lindane) | % | 98 | | | 70-130 | Pass | |
| Heptachlor | % | 111 | | | 70-130 | Pass | |
| Heptachlor epoxide | % | 105 | | | 70-130 | Pass | |
| Hexachlorobenzene | % | 94 | | | 70-130 | Pass | |
| Methoxychlor | % | 115 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Organophosphorus Pesticides** | | | | | | | |
| Diazinon | % | 83 | | | 70-130 | Pass | |
| Dimethoate | % | 71 | | | 70-130 | Pass | |
| Ethion | % | 106 | | | 70-130 | Pass | |
| Fenitrothion | % | 94 | | | 70-130 | Pass | |
| Methyl parathion | % | 92 | | | 70-130 | Pass | |
| Mevinphos | % | 103 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Triazines** | | | | | | | |
| Prometryn | % | 92 | | | 75-125 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Carbamate Pesticides** | | | | | | | |
| Aldicarb | % | 117 | | | 70-130 | Pass | |
| Bendiocarb | % | 119 | | | 70-130 | Pass | |
| Carbaryl | % | 124 | | | 70-130 | Pass | |
| Carbofuran | % | 119 | | | 70-130 | Pass | |
| Methomyl | % | 114 | | | 70-130 | Pass | |
| Oxamyl | % | 144 | | | 70-130 | Fail | |
| Thiobencarb | % | 115 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Heavy Metals** | | | | | | | |
| Arsenic | % | 111 | | | 80-120 | Pass | |
| Cadmium | % | 112 | | | 80-120 | Pass | |
| Chromium | % | 110 | | | 80-120 | Pass | |
| Copper | % | 118 | | | 80-120 | Pass | |
| Lead | % | 119 | | | 80-120 | Pass | |
| Mercury | % | 113 | | | 75-125 | Pass | |
| Nickel | % | 117 | | | 80-120 | Pass | |
| Zinc | % | 114 | | | 80-120 | Pass | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| **Spike - % Recovery** | | | | | | | | | |
| **Organophosphorus Pesticides** | | | | Result 1 | | | | | |
| Diazinon | M18-No00361 | NCP | % | 103 | | | 70-130 | Pass | |
| Dimethoate | M18-No00361 | NCP | % | 97 | | | 70-130 | Pass | |
| Ethion | M18-No00361 | NCP | % | 101 | | | 70-130 | Pass | |
| Fenitrothion | M18-No00361 | NCP | % | 83 | | | 70-130 | Pass | |
| Methyl parathion | M18-No00361 | NCP | % | 73 | | | 70-130 | Pass | |
| Mevinphos | M18-No00361 | NCP | % | 70 | | | 70-130 | Pass | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| **Spike - % Recovery** | | | | | | | | | |
| **Synthetic Pyrethroids*** | | | | Result 1 | | | | | |
| Cyfluthrin* | M18-Oc20554 | NCP | % | 91 | | | 70-130 | Pass | |
| Cypermethrin (total)* | M18-Oc20554 | NCP | % | 93 | | | 70-130 | Pass | |
| Permethrin | M18-Oc20554 | NCP | % | 89 | | | 70-130 | Pass | |
| Resmethrin* | M18-Oc20554 | NCP | % | 93 | | | 70-130 | Pass | |
| Tetramethrin* | M18-Oc20554 | NCP | % | 93 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Organochlorine Pesticides** | | | | Result 1 | | | | | |
| 4.4'-DDD | S18-Oc38412 | CP | % | 108 | | | 70-130 | Pass | |
| 4.4'-DDE | S18-Oc38412 | CP | % | 107 | | | 70-130 | Pass | |
| 4.4'-DDT | S18-Oc38412 | CP | % | 122 | | | 70-130 | Pass | |
| a-BHC | S18-Oc38412 | CP | % | 90 | | | 70-130 | Pass | |
| Aldrin | S18-Oc38412 | CP | % | 97 | | | 70-130 | Pass | |
| b-BHC | S18-Oc38412 | CP | % | 90 | | | 70-130 | Pass | |
| d-BHC | S18-Oc38412 | CP | % | 95 | | | 70-130 | Pass | |
| Dieldrin | S18-Oc38412 | CP | % | 104 | | | 70-130 | Pass | |
| Endosulfan I | S18-Oc38412 | CP | % | 101 | | | 70-130 | Pass | |
| Endosulfan II | S18-Oc38412 | CP | % | 105 | | | 70-130 | Pass | |
| Endosulfan sulphate | S18-Oc38412 | CP | % | 102 | | | 70-130 | Pass | |
| Endrin | S18-Oc38412 | CP | % | 127 | | | 70-130 | Pass | |
| Endrin aldehyde | S18-Oc38412 | CP | % | 104 | | | 70-130 | Pass | |
| Endrin ketone | S18-Oc38412 | CP | % | 107 | | | 70-130 | Pass | |
| g-BHC (Lindane) | S18-Oc38412 | CP | % | 90 | | | 70-130 | Pass | |
| Heptachlor | S18-Oc38412 | CP | % | 108 | | | 70-130 | Pass | |
| Heptachlor epoxide | S18-Oc38412 | CP | % | 97 | | | 70-130 | Pass | |
| Hexachlorobenzene | S18-Oc38412 | CP | % | 85 | | | 70-130 | Pass | |
| Methoxychlor | S18-Oc38412 | CP | % | 113 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Carbamate Pesticides** | | | | Result 1 | | | | | |
| Aldicarb | S18-Oc38412 | CP | % | 174 | | | 70-130 | Fail | Q08 |
| Bendiocarb | S18-Oc38412 | CP | % | 107 | | | 70-130 | Pass | |
| Carbaryl | S18-Oc38412 | CP | % | 108 | | | 70-130 | Pass | |
| Carbofuran | S18-Oc38412 | CP | % | 107 | | | 70-130 | Pass | |
| Methomyl | S18-Oc38412 | CP | % | 110 | | | 70-130 | Pass | |
| Oxamyl | S18-Oc38412 | CP | % | 118 | | | 70-130 | Pass | |
| Thiobencarb | S18-Oc38412 | CP | % | 113 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Synthetic Pyrethroids*** | | | | Result 1 | | | | | |
| Allethrin* | S18-Oc38412 | CP | % | 90 | | | 70-130 | Pass | |
| Fenvalerate* | S18-Oc38412 | CP | % | 79 | | | 70-130 | Pass | |
| Phenothrin* | S18-Oc38412 | CP | % | 88 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | | | | | |
| Arsenic | S18-Oc38412 | CP | % | 104 | | | 75-125 | Pass | |
| Cadmium | S18-Oc38412 | CP | % | 106 | | | 75-125 | Pass | |
| Chromium | S18-Oc38412 | CP | % | 105 | | | 75-125 | Pass | |
| Copper | S18-Oc38412 | CP | % | 103 | | | 75-125 | Pass | |
| Lead | S18-Oc38412 | CP | % | 106 | | | 75-125 | Pass | |
| Mercury | S18-Oc38412 | CP | % | 113 | | | 70-130 | Pass | |
| Nickel | S18-Oc38412 | CP | % | 106 | | | 75-125 | Pass | |
| Zinc | S18-Oc38412 | CP | % | 97 | | | 75-125 | 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 | S18-Oc38411 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| 4.4'-DDD | S18-Oc38411 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| 4.4'-DDE | S18-Oc38411 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| 4.4'-DDT | S18-Oc38411 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| a-BHC | S18-Oc38411 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Aldrin | S18-Oc38411 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| b-BHC | S18-Oc38411 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| d-BHC | S18-Oc38411 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Dieldrin | S18-Oc38411 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan I | S18-Oc38411 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan II | S18-Oc38411 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan sulphate | S18-Oc38411 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin | S18-Oc38411 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin aldehyde | S18-Oc38411 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin ketone | S18-Oc38411 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| g-BHC (Lindane) | S18-Oc38411 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Heptachlor | S18-Oc38411 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Heptachlor epoxide | S18-Oc38411 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Hexachlorobenzene | S18-Oc38411 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Methoxychlor | S18-Oc38411 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Toxaphene | S18-Oc38411 | CP | mg/kg | < 1 | < 1 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Organophosphorus Pesticides** | | | | Result 1 | Result 2 | RPD | | | |
| Azinphos-methyl | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Bolstar | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Chlorfenvinphos | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Chlorpyrifos | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Chlorpyrifos-methyl | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Coumaphos | S18-Oc38411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Demeton-S | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Demeton-O | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Diazinon | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Dichlorvos | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Dimethoate | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Disulfoton | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| EPN | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Ethion | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Ethoprop | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Ethyl parathion | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Fenitrothion | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Fensulfothion | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Fenthion | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Malathion | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Merphos | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Methyl parathion | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Mevinphos | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Monocrotophos | S18-Oc38411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Naled | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Omethoate | S18-Oc38411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Phorate | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Pirimiphos-methyl | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Pyrazophos | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| **Organophosphorus Pesticides** | | | | Result 1 | Result 2 | RPD | | | |
| Ronnel | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Terbufos | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Tetrachlorvinphos | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Tokuthion | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Trichloronate | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Triazines** | | | | Result 1 | Result 2 | RPD | | | |
| Ametryn | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Atraton | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Atrazine | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Prometon | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Prometryn | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Propazine | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Simazine | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Simetryn | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Terbuthylazine | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Terbutryne | S18-Oc38411 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Carbamate Pesticides** | | | | Result 1 | Result 2 | RPD | | | |
| Aldicarb | S18-Oc38411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Bendiocarb | S18-Oc38411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Carbaryl | S18-Oc38411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Carbofuran | S18-Oc38411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Methomyl | S18-Oc38411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Oxamyl | S18-Oc38411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Thiobencarb | S18-Oc38411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Synthetic Pyrethroids*** | | | | Result 1 | Result 2 | RPD | | | |
| Allethrin* | S18-Oc38411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Cyfluthrin* | S18-Oc38411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Cypermethrin (total)* | S18-Oc38411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Fenvalerate* | S18-Oc38411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Permethrin | S18-Oc38411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Phenothrin* | S18-Oc38411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Resmethrin* | S18-Oc38411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Tetramethrin* | S18-Oc38411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | S18-Oc38411 | CP | mg/kg | 14 | 13 | 7.0 | 30% | Pass | |
| Cadmium | S18-Oc38411 | CP | mg/kg | < 0.4 | < 0.4 | <1 | 30% | Pass | |
| Chromium | S18-Oc38411 | CP | mg/kg | 19 | 17 | 7.0 | 30% | Pass | |
| Copper | S18-Oc38411 | CP | mg/kg | 60 | 54 | 11 | 30% | Pass | |
| Lead | S18-Oc38411 | CP | mg/kg | 15 | 13 | 12 | 30% | Pass | |
| Mercury | S18-Oc38411 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Nickel | S18-Oc38411 | CP | mg/kg | 22 | 19 | 14 | 30% | Pass | |
| Zinc | S18-Oc38411 | CP | mg/kg | 80 | 73 | 10 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| % Moisture | S18-Oc38411 | CP | % | 18 | 18 | 2.0 | 30% | Pass | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | S18-Oc38412 | CP | mg/kg | 9.7 | 10.0 | 3.0 | 30% | Pass | |
| Cadmium | S18-Oc38412 | CP | mg/kg | < 0.4 | < 0.4 | <1 | 30% | Pass | |
| Chromium | S18-Oc38412 | CP | mg/kg | 11 | 11 | 2.0 | 30% | Pass | |
| Copper | S18-Oc38412 | CP | mg/kg | 44 | 45 | 2.0 | 30% | Pass | |
| Lead | S18-Oc38412 | CP | mg/kg | 11 | 11 | <1 | 30% | Pass | |
| Mercury | S18-Oc38412 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Nickel | S18-Oc38412 | CP | mg/kg | 14 | 14 | 1.0 | 30% | Pass | |
| Zinc | S18-Oc38412 | CP | mg/kg | 70 | 71 | 2.0 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| % Moisture | S18-Oc38429 | CP | % | 5.7 | 6.0 | 5.0 | 30% | Pass | |

## Comments

## Sample Integrity

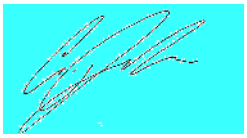
| | |
|---|---|
| Custody Seals Intact (if used) | N/A |
| Attempt to Chill was evident | Yes |
| Sample correctly preserved | Yes |
| Appropriate sample containers have been used | Yes |
| Sample containers for volatile analysis received with minimal headspace | Yes |
| Samples received within HoldingTime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

## Qualifier Codes/Comments

| Code | Description |
|---|---|
| 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

| | |
|---|---|
| Andrew Black | Analytical Services Manager |
| Chris Bennett | Senior Analyst-Metal (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

**SLR Consulting**
**2 Lincoln St**
**Lane Cove West**
**NSW 2066**



**Attention:** **Junaidi Ibrahim**

**Report** **625300-W**
Project name DSI PROTEN TAMWORTH
Project ID 610.18456
Received Date Oct 31, 2018

| **Client Sample ID** | | | **R01** |
|---|---|---|---|
| **Sample Matrix** | | | **Water** |
| **Eurofins \| mgt Sample No.** | | | **S18-Oc38421** |
| **Date Sampled** | | | **Oct 30, 2018** |
| Test/Reference | LOR | Unit | |
| **Organochlorine Pesticides** | | | |
| Chlordanes - Total | 0.001 | mg/L | < 0.001 |
| 4.4'-DDD | 0.0001 | mg/L | < 0.0001 |
| 4.4'-DDE | 0.0001 | mg/L | < 0.0001 |
| 4.4'-DDT | 0.0001 | mg/L | < 0.0001 |
| a-BHC | 0.0001 | mg/L | < 0.0001 |
| Aldrin | 0.0001 | mg/L | < 0.0001 |
| b-BHC | 0.0001 | mg/L | < 0.0001 |
| d-BHC | 0.0001 | mg/L | < 0.0001 |
| Dieldrin | 0.0001 | mg/L | < 0.0001 |
| Endosulfan I | 0.0001 | mg/L | < 0.0001 |
| Endosulfan II | 0.0001 | mg/L | < 0.0001 |
| Endosulfan sulphate | 0.0001 | mg/L | < 0.0001 |
| Endrin | 0.0001 | mg/L | < 0.0001 |
| Endrin aldehyde | 0.0001 | mg/L | < 0.0001 |
| Endrin ketone | 0.0001 | mg/L | < 0.0001 |
| g-BHC (Lindane) | 0.0001 | mg/L | < 0.0001 |
| Heptachlor | 0.0001 | mg/L | < 0.0001 |
| Heptachlor epoxide | 0.0001 | mg/L | < 0.0001 |
| Hexachlorobenzene | 0.0001 | mg/L | < 0.0001 |
| Methoxychlor | 0.0001 | mg/L | < 0.0001 |
| Toxaphene | 0.01 | mg/L | < 0.01 |
| Aldrin and Dieldrin (Total)* | 0.0001 | mg/L | < 0.0001 |
| DDT + DDE + DDD (Total)* | 0.0001 | mg/L | < 0.0001 |
| Vic EPA IWRG 621 OCP (Total)* | 0.001 | mg/L | < 0.001 |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.001 | mg/L | < 0.001 |
| Dibutylchlorendate (surr.) | 1 | % | 98 |
| Tetrachloro-m-xylene (surr.) | 1 | % | 62 |
| **Organophosphorus Pesticides** | | | |
| Azinphos-methyl | 0.002 | mg/L | < 0.002 |
| Bolstar | 0.002 | mg/L | < 0.002 |
| Chlorfenvinphos | 0.002 | mg/L | < 0.002 |
| Chlorpyrifos | 0.02 | mg/L | < 0.02 |
| Chlorpyrifos-methyl | 0.002 | mg/L | < 0.002 |
| Coumaphos | 0.02 | mg/L | < 0.02 |
| Demeton-S | 0.02 | mg/L | < 0.02 |

| Client Sample ID | | | R01 |
|---|---|---|---|
| Sample Matrix | | | Water |
| Eurofins \| mgt Sample No. | | | S18-Oc38421 |
| Date Sampled | | | Oct 30, 2018 |
| Test/Reference | LOR | Unit | |
| **Organophosphorus Pesticides** | | | |
| Demeton-O | 0.002 | mg/L | < 0.002 |
| Diazinon | 0.002 | mg/L | < 0.002 |
| Dichlorvos | 0.002 | mg/L | < 0.002 |
| Dimethoate | 0.002 | mg/L | < 0.002 |
| Disulfoton | 0.002 | mg/L | < 0.002 |
| EPN | 0.002 | mg/L | < 0.002 |
| Ethion | 0.002 | mg/L | < 0.002 |
| Ethoprop | 0.002 | mg/L | < 0.002 |
| Ethyl parathion | 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 |
| Malathion | 0.002 | mg/L | < 0.002 |
| Merphos | 0.002 | mg/L | < 0.002 |
| Methyl parathion | 0.002 | mg/L | < 0.002 |
| Mevinphos | 0.002 | mg/L | < 0.002 |
| Monocrotophos | 0.002 | mg/L | < 0.002 |
| Naled | 0.002 | mg/L | < 0.002 |
| Omethoate | 0.002 | mg/L | < 0.002 |
| Phorate | 0.002 | mg/L | < 0.002 |
| Pirimiphos-methyl | 0.02 | mg/L | < 0.02 |
| Pyrazophos | 0.002 | mg/L | < 0.002 |
| Ronnel | 0.002 | mg/L | < 0.002 |
| Terbufos | 0.002 | mg/L | < 0.002 |
| Tetrachlorvinphos | 0.002 | mg/L | < 0.002 |
| Tokuthion | 0.002 | mg/L | < 0.002 |
| Trichloronate | 0.002 | mg/L | < 0.002 |
| Triphenylphosphate (surr.) | 1 | % | 58 |
| **Triazines** | | | |
| Ametryn | 0.002 | mg/L | < 0.002 |
| Atraton | 0.002 | mg/L | < 0.002 |
| Atrazine | 0.002 | mg/L | < 0.002 |
| Prometon | 0.002 | mg/L | < 0.002 |
| Prometryn | 0.002 | mg/L | < 0.002 |
| Propazine | 0.002 | mg/L | < 0.002 |
| Simazine | 0.002 | mg/L | < 0.002 |
| Simetryn | 0.002 | mg/L | < 0.002 |
| Terbuthylazine | 0.002 | mg/L | < 0.002 |
| Terbutryne | 0.002 | mg/L | < 0.002 |
| **Carbamate Pesticides** | | | |
| Aldicarb | 0.01 | mg/L | < 0.01 |
| Bendiocarb | 0.01 | mg/L | < 0.1 |
| Carbaryl | 0.01 | mg/L | < 0.01 |
| Carbofuran | 0.01 | mg/L | < 0.1 |
| Methomyl | 0.01 | mg/L | < 0.05 |
| Oxamyl | 0.01 | mg/L | < 0.01 |
| Thiobencarb | 0.01 | mg/L | < 0.01 |

| Client Sample ID | | | R01 |
|---|---|---|---|
| **Sample Matrix** | | | **Water** |
| **Eurofins \| mgt Sample No.** | | | **S18-Oc38421** |
| **Date Sampled** | | | **Oct 30, 2018** |
| Test/Reference | LOR | Unit | |
| **Synthetic Pyrethroids*** | | | |
| Allethrin* | 0.2 | mg/L | < 0.2 |
| Cyfluthrin* | 0.2 | mg/L | < 0.2 |
| Cypermethrin (total)* | 0.2 | mg/L | < 0.2 |
| Fenvalerate* | 0.2 | mg/L | < 0.2 |
| Permethrin | 0.2 | mg/L | < 0.2 |
| Phenothrin* | 0.2 | mg/L | < 0.2 |
| Resmethrin* | 0.2 | mg/L | < 0.2 |
| Tetramethrin* | 0.2 | mg/L | < 0.2 |
| **Heavy Metals** | | | |
| Arsenic | 0.001 | mg/L | < 0.001 |
| Cadmium | 0.0002 | mg/L | < 0.0002 |
| Chromium | 0.001 | mg/L | < 0.001 |
| Copper | 0.001 | mg/L | < 0.001 |
| Lead | 0.001 | mg/L | < 0.001 |
| Mercury | 0.0001 | mg/L | < 0.0001 |
| Nickel | 0.001 | mg/L | < 0.001 |
| Zinc | 0.005 | mg/L | < 0.005 |

## Sample History

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

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

| Description | Testing Site | Extracted | Holding Time |
|---|---|---|---|
| Eurofins \| mgt Suite B14 | | | |
| Organochlorine Pesticides | Melbourne | Nov 01, 2018 | 7 Day |
| - Method: LTM-ORG-2220 OCP & PCB in Soil and Water | | | |
| Organophosphorus Pesticides | Melbourne | Nov 01, 2018 | 7 Day |
| - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS | | | |
| Triazines | Melbourne | Nov 01, 2018 | 7 Day |
| - Method: LTM-ORG-2080 | | | |
| Carbamate Pesticides | Melbourne | Nov 01, 2018 | 7 Day |
| - Method: LTM-ORG-2290 Carbamates in waters and soils by HPLC | | | |
| Synthetic Pyrethroids* | Melbourne | Nov 01, 2018 | 7 Day |
| - Method: LTM-ORG-2170 Synthetic Pyrethroids by HPLC-UV | | | |
| Metals M8 | Melbourne | Nov 01, 2018 | 28 Days |
| - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS | | | |

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

**Melbourne**
2-5 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

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

**Company Name:** SLR Consulting (Sydney)
**Address:** 2 Lincoln St
Lane Cove West
NSW 2066

**Project Name:** DSI PROTEN TAMWORTH
**Project ID:** 610.18456

**Order No.:**
**Report #:** 625300
**Phone:** 02 9428 8100
**Fax:**

**Received:** Oct 31, 2018 9:45 AM
**Due:** Nov 7, 2018
**Priority:** 5 Day
**Contact Name:** Junaidi Ibrahim

**Eurofins | mgt Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | HOLD | HOLD | Triazines | Carbamate Pesticides | Synthetic Pyrethroids* | Metals M8 | Eurofins \| mgt Suite B14 | Moisture Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | X | | X | X | X | X | X | X |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | X | | | | | | |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | | | | | | | |
| 1 | TP01_0.2-0.4 | Oct 30, 2018 | | Soil | S18-Oc38411 | | | X | X | X | X | X | X |
| 2 | TP01_0.5-0.6 | Oct 30, 2018 | | Soil | S18-Oc38412 | | | X | X | X | X | X | X |
| 3 | TP02_0.2-0.3 | Oct 30, 2018 | | Soil | S18-Oc38413 | | | X | X | X | X | X | X |
| 4 | TP02_0.4-0.5 | Oct 30, 2018 | | Soil | S18-Oc38414 | | | X | X | X | X | X | X |
| 5 | TP02_0.9-1.0 | Oct 30, 2018 | | Soil | S18-Oc38415 | | | X | X | X | X | X | X |
| 6 | TP03_0.1-0.2 | Oct 30, 2018 | | Soil | S18-Oc38416 | | | X | X | X | X | X | X |
| 7 | TP03_0.4-0.5 | Oct 30, 2018 | | Soil | S18-Oc38417 | | | X | X | X | X | X | X |
| 8 | TP03_0.9-1.0 | Oct 30, 2018 | | Soil | S18-Oc38418 | | | X | X | X | X | X | X |
| 9 | TP04_0.1-0.2 | Oct 30, 2018 | | Soil | S18-Oc38419 | | | X | X | X | X | X | X |

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

**Melbourne**
2-5 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

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

**Company Name:** SLR Consulting (Sydney)
**Address:** 2 Lincoln St
Lane Cove West
NSW 2066

**Project Name:** DSI PROTEN TAMWORTH
**Project ID:** 610.18456

**Order No.:**
**Report #:** 625300
**Phone:** 02 9428 8100
**Fax:**

**Received:** Oct 31, 2018 9:45 AM
**Due:** Nov 7, 2018
**Priority:** 5 Day
**Contact Name:** Junaidi Ibrahim

**Eurofins | mgt Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | HOLD | HOLD | Triazines | Carbamate Pesticides | Synthetic Pyrethroids* | Metals M8 | Eurofins \| mgt Suite B14 | Moisture Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | X | | X | X | X | X | X | X |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | X | | | | | | |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | | |
| 10 | QC1 | Oct 30, 2018 | | Soil | S18-Oc38420 | | | X | X | X | X | X | X |
| 11 | R01 | Oct 30, 2018 | | Water | S18-Oc38421 | | | X | X | X | X | X | |
| 12 | TS | Oct 30, 2018 | | Water | S18-Oc38422 | X | | | | | | | |
| 13 | TB | Oct 30, 2018 | | Water | S18-Oc38423 | X | | | | | | | |
| 14 | TS | Oct 30, 2018 | | Soil | S18-Oc38424 | | X | | | | | | |
| 15 | TB | Oct 30, 2018 | | Soil | S18-Oc38425 | | X | | | | | | |
| 16 | LAB SPIKE | Oct 30, 2018 | | Soil | S18-Oc38426 | | X | | | | | | |
| 17 | TP01_1.3-1.5 | Oct 30, 2018 | | Soil | S18-Oc38429 | | | X | X | X | X | X | X |
| **Test Counts** | | | | | | 5 | 5 | 12 | 12 | 12 | 12 | 12 | 11 |

## 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. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

### Holding Times

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

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

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

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

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

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

### Units

**mg/kg:** milligrams per kilogram

**mg/L:** milligrams per litre

**ug/L:** micrograms per litre

**ppm:** Parts per million

**ppb:** Parts per billion

**%:** Percentage

**org/100mL:** Organisms per 100 millilitres

**NTU:** Nephelometric Turbidity Units

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

### Terms

| | |
|---|---|
| **Dry** | Where a moisture has been determined on a solid sample the result is expressed on a dry basis. |
| **LOR** | Limit of Reporting. |
| **SPIKE** | Addition of the analyte to the sample and reported as percentage recovery. |
| **RPD** | Relative Percent Difference between two Duplicate pieces of analysis. |
| **LCS** | Laboratory Control Sample - reported as percent recovery. |
| **CRM** | Certified Reference Material - reported as percent recovery. |
| **Method Blank** | In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water. |
| **Surr - Surrogate** | The addition of a like compound to the analyte target and reported as percentage recovery. |
| **Duplicate** | A second piece of analysis from the same sample and reported in the same units as the result to show comparison. |
| **USEPA** | United States Environmental Protection Agency |
| **APHA** | American Public Health Association |
| **TCLP** | Toxicity Characteristic Leaching Procedure |
| **COC** | Chain of Custody |
| **SRA** | Sample Receipt Advice |
| **QSM** | Quality Systems Manual ver 5.1 US Department of Defense |
| **CP** | Client Parent - QC was performed on samples pertaining to this report |
| **NCP** | Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within. |
| **TEQ** | Toxic Equivalency Quotient |

### QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

### QC Data General Comments

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

**Quality Control Results**

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| **Method Blank** | | | | | | | |
| **Organochlorine Pesticides** | | | | | | | |
| Chlordanes - Total | mg/L | < 0.001 | | | 0.001 | Pass | |
| 4.4'-DDD | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| 4.4'-DDE | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| 4.4'-DDT | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| a-BHC | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Aldrin | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| b-BHC | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| d-BHC | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Dieldrin | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Endosulfan I | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Endosulfan II | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Endosulfan sulphate | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Endrin | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Endrin aldehyde | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Endrin ketone | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| g-BHC (Lindane) | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Heptachlor | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Heptachlor epoxide | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Hexachlorobenzene | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Methoxychlor | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Toxaphene | mg/L | < 0.01 | | | 0.01 | Pass | |
| **Method Blank** | | | | | | | |
| **Organophosphorus Pesticides** | | | | | | | |
| Azinphos-methyl | mg/L | < 0.002 | | | 0.002 | Pass | |
| Bolstar | mg/L | < 0.002 | | | 0.002 | Pass | |
| Chlorfenvinphos | mg/L | < 0.002 | | | 0.002 | Pass | |
| Chlorpyrifos | mg/L | < 0.02 | | | 0.02 | Pass | |
| Chlorpyrifos-methyl | mg/L | < 0.002 | | | 0.002 | Pass | |
| Coumaphos | mg/L | < 0.02 | | | 0.02 | Pass | |
| Demeton-S | mg/L | < 0.02 | | | 0.02 | 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 | |
| Dimethoate | mg/L | < 0.002 | | | 0.002 | Pass | |
| Disulfoton | mg/L | < 0.002 | | | 0.002 | Pass | |
| EPN | mg/L | < 0.002 | | | 0.002 | Pass | |
| Ethion | mg/L | < 0.002 | | | 0.002 | Pass | |
| Ethoprop | mg/L | < 0.002 | | | 0.002 | Pass | |
| Ethyl parathion | 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 | |
| Malathion | mg/L | < 0.002 | | | 0.002 | Pass | |
| Merphos | mg/L | < 0.002 | | | 0.002 | Pass | |
| Methyl parathion | mg/L | < 0.002 | | | 0.002 | Pass | |
| Mevinphos | mg/L | < 0.002 | | | 0.002 | Pass | |
| Monocrotophos | mg/L | < 0.002 | | | 0.002 | Pass | |
| Naled | mg/L | < 0.002 | | | 0.002 | Pass | |
| Omethoate | mg/L | < 0.002 | | | 0.002 | Pass | |
| Phorate | mg/L | < 0.002 | | | 0.002 | Pass | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| Pirimiphos-methyl | mg/L | < 0.02 | | | 0.02 | Pass | |
| Pyrazophos | mg/L | < 0.002 | | | 0.002 | Pass | |
| Ronnel | mg/L | < 0.002 | | | 0.002 | Pass | |
| Terbufos | mg/L | < 0.002 | | | 0.002 | Pass | |
| Tetrachlorvinphos | 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** | | | | | | | |
| **Triazines** | | | | | | | |
| Ametryn | mg/L | < 0.002 | | | 0.002 | Pass | |
| Atraton | mg/L | < 0.002 | | | 0.002 | Pass | |
| Atrazine | mg/L | < 0.002 | | | 0.002 | Pass | |
| Prometon | mg/L | < 0.002 | | | 0.002 | Pass | |
| Prometryn | mg/L | < 0.002 | | | 0.002 | Pass | |
| Propazine | mg/L | < 0.002 | | | 0.002 | Pass | |
| Simazine | mg/L | < 0.002 | | | 0.002 | Pass | |
| Simetryn | mg/L | < 0.002 | | | 0.002 | Pass | |
| Terbuthylazine | mg/L | < 0.002 | | | 0.002 | Pass | |
| Terbutryne | 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 | < 0.005 | | | 0.005 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Organochlorine Pesticides** | | | | | | | |
| Chlordanes - Total | % | 102 | | | 70-130 | Pass | |
| 4.4'-DDD | % | 99 | | | 70-130 | Pass | |
| 4.4'-DDE | % | 126 | | | 70-130 | Pass | |
| 4.4'-DDT | % | 89 | | | 70-130 | Pass | |
| a-BHC | % | 121 | | | 70-130 | Pass | |
| Aldrin | % | 104 | | | 70-130 | Pass | |
| b-BHC | % | 123 | | | 70-130 | Pass | |
| d-BHC | % | 114 | | | 70-130 | Pass | |
| Dieldrin | % | 119 | | | 70-130 | Pass | |
| Endosulfan I | % | 125 | | | 70-130 | Pass | |
| Endosulfan II | % | 124 | | | 70-130 | Pass | |
| Endosulfan sulphate | % | 92 | | | 70-130 | Pass | |
| Endrin | % | 115 | | | 70-130 | Pass | |
| Endrin aldehyde | % | 82 | | | 70-130 | Pass | |
| Endrin ketone | % | 115 | | | 70-130 | Pass | |
| g-BHC (Lindane) | % | 113 | | | 70-130 | Pass | |
| Heptachlor | % | 115 | | | 70-130 | Pass | |
| Heptachlor epoxide | % | 105 | | | 70-130 | Pass | |
| Hexachlorobenzene | % | 120 | | | 70-130 | Pass | |
| Methoxychlor | % | 71 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Organophosphorus Pesticides** | | | | | | | |
| Diazinon | % | 84 | | | 70-130 | Pass | |

| Test | | | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| Dimethoate | | | % | 74 | | | 70-130 | Pass | |
| Ethion | | | % | 78 | | | 70-130 | Pass | |
| Fenitrothion | | | % | 72 | | | 70-130 | Pass | |
| Methyl parathion | | | % | 78 | | | 70-130 | Pass | |
| Mevinphos | | | % | 90 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | | | |
| **Triazines** | | | | | | | | | |
| Prometryn | | | % | 80 | | | 75-125 | Pass | |
| **LCS - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | | | | | | |
| Arsenic | | | % | 95 | | | 80-120 | Pass | |
| Cadmium | | | % | 95 | | | 80-120 | Pass | |
| Chromium | | | % | 92 | | | 80-120 | Pass | |
| Copper | | | % | 94 | | | 80-120 | Pass | |
| Lead | | | % | 92 | | | 80-120 | Pass | |
| Mercury | | | % | 89 | | | 75-125 | Pass | |
| Nickel | | | % | 94 | | | 80-120 | Pass | |
| Zinc | | | % | 98 | | | 80-120 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Spike - % Recovery** | | | | | | | | | |
| **Organochlorine Pesticides** | | | | Result 1 | | | | | |
| Chlordanes - Total | M18-Oc34276 | NCP | % | 80 | | | 70-130 | Pass | |
| 4.4'-DDD | M18-Oc34276 | NCP | % | 73 | | | 70-130 | Pass | |
| 4.4'-DDE | M18-Oc34276 | NCP | % | 90 | | | 70-130 | Pass | |
| 4.4'-DDT | M18-Oc34276 | NCP | % | 74 | | | 70-130 | Pass | |
| a-BHC | M18-Oc34276 | NCP | % | 81 | | | 70-130 | Pass | |
| Aldrin | M18-Oc34276 | NCP | % | 72 | | | 70-130 | Pass | |
| b-BHC | M18-Oc34276 | NCP | % | 80 | | | 70-130 | Pass | |
| d-BHC | M18-Oc34276 | NCP | % | 91 | | | 70-130 | Pass | |
| Dieldrin | M18-Oc34276 | NCP | % | 92 | | | 70-130 | Pass | |
| Endosulfan I | M18-Oc34276 | NCP | % | 93 | | | 70-130 | Pass | |
| Endosulfan II | M18-Oc34276 | NCP | % | 98 | | | 70-130 | Pass | |
| Endosulfan sulphate | M18-Oc33704 | NCP | % | 85 | | | 70-130 | Pass | |
| Endrin | M18-Oc34276 | NCP | % | 81 | | | 70-130 | Pass | |
| Endrin aldehyde | M18-Oc34276 | NCP | % | 71 | | | 70-130 | Pass | |
| Endrin ketone | M18-Oc34276 | NCP | % | 86 | | | 70-130 | Pass | |
| g-BHC (Lindane) | M18-Oc34276 | NCP | % | 95 | | | 70-130 | Pass | |
| Heptachlor | M18-Oc34276 | NCP | % | 71 | | | 70-130 | Pass | |
| Heptachlor epoxide | M18-Oc34276 | NCP | % | 82 | | | 70-130 | Pass | |
| Hexachlorobenzene | M18-Oc34276 | NCP | % | 75 | | | 70-130 | Pass | |
| Methoxychlor | M18-Oc33704 | NCP | % | 91 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Organophosphorus Pesticides** | | | | Result 1 | | | | | |
| Diazinon | M18-Oc37832 | NCP | % | 109 | | | 70-130 | Pass | |
| Dimethoate | M18-Oc37832 | NCP | % | 79 | | | 70-130 | Pass | |
| Ethion | M18-Oc37832 | NCP | % | 84 | | | 70-130 | Pass | |
| Fenitrothion | M18-Oc37832 | NCP | % | 95 | | | 70-130 | Pass | |
| Methyl parathion | M18-Oc37832 | NCP | % | 89 | | | 70-130 | Pass | |
| Mevinphos | M18-Oc37832 | NCP | % | 84 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | | | | | |
| Arsenic | M18-Oc37667 | NCP | % | 98 | | | 75-125 | Pass | |
| Cadmium | M18-Oc37667 | NCP | % | 98 | | | 75-125 | Pass | |
| Chromium | M18-Oc37667 | NCP | % | 97 | | | 75-125 | Pass | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| Copper | M18-Oc37667 | NCP | % | 98 | | | 75-125 | Pass | |
| Lead | M18-Oc37667 | NCP | % | 95 | | | 75-125 | Pass | |
| Mercury | M18-Oc37667 | NCP | % | 93 | | | 70-130 | Pass | |
| Nickel | M18-Oc37667 | NCP | % | 99 | | | 75-125 | Pass | |
| Zinc | M18-Oc37667 | NCP | % | 101 | | | 75-125 | 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 | M18-Oc37831 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| 4.4'-DDD | M18-Oc37831 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| 4.4'-DDE | M18-Oc37831 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| 4.4'-DDT | M18-Oc37831 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| a-BHC | M18-Oc37831 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Aldrin | M18-Oc37831 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| b-BHC | M18-Oc37831 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| d-BHC | M18-Oc37831 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Dieldrin | M18-Oc37831 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Endosulfan I | M18-Oc37831 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Endosulfan II | M18-Oc37831 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Endosulfan sulphate | M18-Oc37831 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Endrin | M18-Oc37831 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Endrin aldehyde | M18-Oc37831 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Endrin ketone | M18-Oc37831 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| g-BHC (Lindane) | M18-Oc37831 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Heptachlor | M18-Oc37831 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Heptachlor epoxide | M18-Oc37831 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Hexachlorobenzene | M18-Oc37831 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Methoxychlor | M18-Oc37831 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Organophosphorus Pesticides** | | | | Result 1 | Result 2 | RPD | | | |
| Azinphos-methyl | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Bolstar | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Chlorfenvinphos | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Chlorpyrifos | M18-Oc37831 | NCP | mg/L | < 0.02 | < 0.02 | <1 | 30% | Pass | |
| Chlorpyrifos-methyl | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Coumaphos | M18-Oc37831 | NCP | mg/L | < 0.02 | < 0.02 | <1 | 30% | Pass | |
| Demeton-S | M18-Oc37831 | NCP | mg/L | < 0.02 | < 0.02 | <1 | 30% | Pass | |
| Demeton-O | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Diazinon | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Dichlorvos | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Dimethoate | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Disulfoton | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| EPN | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Ethion | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Ethoprop | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Ethyl parathion | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Fenitrothion | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Fensulfothion | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Fenthion | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Malathion | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Merphos | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Methyl parathion | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Mevinphos | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Monocrotophos | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| **Organophosphorus Pesticides** | | | | Result 1 | Result 2 | RPD | | | |
| Naled | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Omethoate | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Phorate | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Pirimiphos-methyl | M18-Oc37831 | NCP | mg/L | < 0.02 | < 0.02 | <1 | 30% | Pass | |
| Pyrazophos | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Ronnel | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Terbufos | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Tetrachlorvinphos | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Tokuthion | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Trichloronate | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Triazines** | | | | Result 1 | Result 2 | RPD | | | |
| Ametryn | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Atraton | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Atrazine | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Prometon | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Prometryn | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Propazine | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Simazine | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Simetryn | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Terbuthylazine | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Terbutryne | M18-Oc37831 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | M18-Oc37667 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Cadmium | M18-Oc37667 | NCP | mg/L | < 0.0002 | < 0.0002 | <1 | 30% | Pass | |
| Chromium | M18-Oc37667 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Copper | M18-Oc37667 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Lead | M18-Oc37667 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Mercury | M18-Oc37667 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Nickel | M18-Oc37667 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Zinc | M18-Oc37667 | NCP | mg/L | < 0.005 | < 0.005 | <1 | 30% | Pass | |

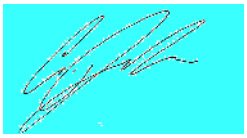
## Comments

### Sample Integrity

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

### Authorised By

| | |
|---|---|
| Andrew Black | Analytical Services Manager |
| Chris Bennett | Senior Analyst-Metal (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.

**SLR Consulting**
**2 Lincoln St**
**Lane Cove West**
**NSW 2066**

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

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

**Attention:** **Junaidi Ibrahim**

**Report** **631838-S**
Project name PROTEN TAMWORTH SCA
Project ID 610.18456.00100
Received Date Dec 07, 2018

| **Client Sample ID** | | | **TP01_0.1** | **TP01_0.7** | **TP01_1.2** | **TP16_0.2** |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins \| mgt Sample No.** | | | **S18-De08338** | **S18-De08339** | **S18-De08340** | **S18-De08341** |
| **Date Sampled** | | | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** |
| Test/Reference | LOR | Unit | | | | |
| **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 |
| Aldrin and Dieldrin (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| DDT + DDE + DDD (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Vic EPA IWRG 621 OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Dibutylchlorendate (surr.) | 1 | % | 70 | 72 | 89 | 134 |
| Tetrachloro-m-xylene (surr.) | 1 | % | 110 | 116 | 66 | 77 |
| **Organophosphorus Pesticides** | | | | | | |
| Azinphos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Bolstar | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chlorfenvinphos | 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 |
| Chlorpyrifos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Coumaphos | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Demeton-S | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |

| Client Sample ID | | | TP01_0.1 | TP01_0.7 | TP01_1.2 | TP16_0.2 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins \| mgt Sample No. | | | S18-De08338 | S18-De08339 | S18-De08340 | S18-De08341 |
| Date Sampled | | | Dec 06, 2018 | Dec 06, 2018 | Dec 06, 2018 | Dec 06, 2018 |
| Test/Reference | LOR | Unit | | | | |
| **Organophosphorus Pesticides** | | | | | | |
| 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 |
| Dimethoate | 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 |
| EPN | 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 |
| Ethyl parathion | 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 |
| Malathion | 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 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 |
| Monocrotophos | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Naled | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Omethoate | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Phorate | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Pirimiphos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Pyrazophos | 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 |
| Terbufos | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Tetrachlorvinphos | 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 | % | 85 | 84 | 114 | 113 |
| **Triazines** | | | | | | |
| Ametryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Atraton | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Atrazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Prometon | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Prometryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Propazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Simazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Simetryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Terbuthylazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Terbutryne | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| **Carbamate Pesticides** | | | | | | |
| Aldicarb | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Bendiocarb | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Carbaryl | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Carbofuran | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Methomyl | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Oxamyl | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Thiobencarb | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |

| Client Sample ID | | | TP01_0.1 | TP01_0.7 | TP01_1.2 | TP16_0.2 |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins \| mgt Sample No.** | | | **S18-De08338** | **S18-De08339** | **S18-De08340** | **S18-De08341** |
| **Date Sampled** | | | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** |
| Test/Reference | LOR | Unit | | | | |
| **Synthetic Pyrethroids*** | | | | | | |
| Allethrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Cyfluthrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Cypermethrin (total)* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Fenvalerate* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Permethrin | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Phenothrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Resmethrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Tetramethrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 860 | 280 | 230 | 780 |
| Cadmium | 0.4 | mg/kg | 1.6 | < 0.4 | < 0.4 | < 0.4 |
| Chromium | 5 | mg/kg | 14 | 12 | 9.4 | 15 |
| Copper | 5 | mg/kg | 53 | 46 | 46 | 48 |
| Lead | 5 | mg/kg | 83 | 12 | 15 | 18 |
| Mercury | 0.1 | mg/kg | 0.6 | < 0.1 | < 0.1 | 0.3 |
| Nickel | 5 | mg/kg | 11 | 14 | 12 | 15 |
| Zinc | 5 | mg/kg | 940 | 97 | 160 | 330 |
| | | | | | | |
| % Moisture | 1 | % | 20 | 12 | 8.6 | 16 |

| Client Sample ID | | | TP16_0.6 | TP16_1.1 | TP02_0.2 | TP02_0.7 |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins \| mgt Sample No.** | | | **S18-De08342** | **S18-De08343** | **S18-De08406** | **S18-De08407** |
| **Date Sampled** | | | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** |
| Test/Reference | LOR | Unit | | | | |
| **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 |
| Aldrin and Dieldrin (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |

| Client Sample ID | | | TP16_0.6 | TP16_1.1 | TP02_0.2 | TP02_0.7 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins \| mgt Sample No. | | | S18-De08342 | S18-De08343 | S18-De08406 | S18-De08407 |
| Date Sampled | | | Dec 06, 2018 | Dec 06, 2018 | Dec 06, 2018 | Dec 06, 2018 |
| Test/Reference | LOR | Unit | | | | |
| **Organochlorine Pesticides** | | | | | | |
| DDT + DDE + DDD (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Vic EPA IWRG 621 OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Dibutylchlorendate (surr.) | 1 | % | 134 | 129 | 129 | 95 |
| Tetrachloro-m-xylene (surr.) | 1 | % | 70 | 78 | 90 | 66 |
| **Organophosphorus Pesticides** | | | | | | |
| Azinphos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Bolstar | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chlorfenvinphos | 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 |
| Chlorpyrifos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Coumaphos | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Demeton-S | 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 |
| Dimethoate | 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 |
| EPN | 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 |
| Ethyl parathion | 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 |
| Malathion | 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 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 |
| Monocrotophos | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Naled | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Omethoate | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Phorate | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Pirimiphos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Pyrazophos | 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 |
| Terbufos | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Tetrachlorvinphos | 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 | % | 103 | 111 | 119 | 127 |
| **Triazines** | | | | | | |
| Ametryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Atraton | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Atrazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Prometon | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Prometryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Propazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Simazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |

| Client Sample ID | | | TP16_0.6 | TP16_1.1 | TP02_0.2 | TP02_0.7 |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins \| mgt Sample No.** | | | **S18-De08342** | **S18-De08343** | **S18-De08406** | **S18-De08407** |
| **Date Sampled** | | | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** |
| Test/Reference | LOR | Unit | | | | |
| **Triazines** | | | | | | |
| Simetryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Terbuthylazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Terbutryne | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| **Carbamate Pesticides** | | | | | | |
| Aldicarb | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Bendiocarb | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Carbaryl | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Carbofuran | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Methomyl | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Oxamyl | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Thiobencarb | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| **Synthetic Pyrethroids*** | | | | | | |
| Allethrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Cyfluthrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Cypermethrin (total)* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Fenvalerate* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Permethrin | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Phenothrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Resmethrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Tetramethrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 250 | 180 | 380 | 43 |
| Cadmium | 0.4 | mg/kg | < 0.4 | < 0.4 | 0.4 | < 0.4 |
| Chromium | 5 | mg/kg | 13 | 11 | 15 | 9.8 |
| Copper | 5 | mg/kg | 53 | 46 | 46 | 39 |
| Lead | 5 | mg/kg | 12 | 10 | 63 | 8.5 |
| Mercury | 0.1 | mg/kg | 0.2 | < 0.1 | 0.3 | < 0.1 |
| Nickel | 5 | mg/kg | 14 | 12 | 14 | 12 |
| Zinc | 5 | mg/kg | 95 | 81 | 390 | 62 |
| | | | | | | |
| % Moisture | 1 | % | 11 | 7.9 | 11 | 9.0 |

| Client Sample ID | | | TP02_1.2 | TP06_0.2 | TP06_0.6 | TP06_1.1 |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins \| mgt Sample No.** | | | **S18-De08408** | **S18-De08409** | **S18-De08410** | **S18-De08411** |
| **Date Sampled** | | | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** |
| Test/Reference | LOR | Unit | | | | |
| **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 | 0.06 | < 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 | | | TP02_1.2 | TP06_0.2 | TP06_0.6 | TP06_1.1 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins \| mgt Sample No. | | | S18-De08408 | S18-De08409 | S18-De08410 | S18-De08411 |
| Date Sampled | | | Dec 06, 2018 | Dec 06, 2018 | Dec 06, 2018 | Dec 06, 2018 |
| 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 |
| Aldrin and Dieldrin (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| DDT + DDE + DDD (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Vic EPA IWRG 621 OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Dibutylchlorendate (surr.) | 1 | % | 92 | 94 | 85 | 80 |
| Tetrachloro-m-xylene (surr.) | 1 | % | 59 | 116 | 114 | 116 |
| **Organophosphorus Pesticides** | | | | | | |
| Azinphos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Bolstar | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chlorfenvinphos | 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 |
| Chlorpyrifos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Coumaphos | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Demeton-S | 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 |
| Dimethoate | 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 |
| EPN | 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 |
| Ethyl parathion | 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 |
| Malathion | 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 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 |
| Monocrotophos | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Naled | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Omethoate | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Phorate | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Pirimiphos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Pyrazophos | 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 |
| Terbufos | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |

| Client Sample ID | | | TP02_1.2 | TP06_0.2 | TP06_0.6 | TP06_1.1 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins \| mgt Sample No. | | | S18-De08408 | S18-De08409 | S18-De08410 | S18-De08411 |
| Date Sampled | | | Dec 06, 2018 | Dec 06, 2018 | Dec 06, 2018 | Dec 06, 2018 |
| Test/Reference | LOR | Unit | | | | |
| **Organophosphorus Pesticides** | | | | | | |
| Tetrachlorvinphos | 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 | % | 75 | 121 | 111 | 91 |
| **Triazines** | | | | | | |
| Ametryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Atraton | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Atrazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Prometon | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Prometryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Propazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Simazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Simetryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Terbuthylazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Terbutryne | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| **Carbamate Pesticides** | | | | | | |
| Aldicarb | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Bendiocarb | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Carbaryl | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Carbofuran | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Methomyl | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Oxamyl | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Thiobencarb | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| **Synthetic Pyrethroids*** | | | | | | |
| Allethrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Cyfluthrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Cypermethrin (total)* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Fenvalerate* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Permethrin | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Phenothrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Resmethrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Tetramethrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 43 | 390 | 26 | 25 |
| Cadmium | 0.4 | mg/kg | < 0.4 | < 0.4 | < 0.4 | < 0.4 |
| Chromium | 5 | mg/kg | 9.4 | 14 | 9.0 | 8.5 |
| Copper | 5 | mg/kg | 28 | 53 | 41 | 40 |
| Lead | 5 | mg/kg | 14 | 42 | 8.6 | 11 |
| Mercury | 0.1 | mg/kg | < 0.1 | 0.3 | < 0.1 | < 0.1 |
| Nickel | 5 | mg/kg | 10 | 13 | 12 | 12 |
| Zinc | 5 | mg/kg | 52 | 220 | 68 | 73 |
| | | | | | | |
| % Moisture | 1 | % | 9.9 | 14 | 6.4 | 6.1 |

| Client Sample ID | | | TP07_0.2 | TP07_0.6 | TP07_1.1 | TP11_0.2 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins \| mgt Sample No. | | | S18-De08412 | S18-De08413 | S18-De08414 | S18-De08415 |
| Date Sampled | | | Dec 06, 2018 | Dec 06, 2018 | Dec 06, 2018 | Dec 06, 2018 |
| Test/Reference | LOR | Unit | | | | |
| **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 |
| Aldrin and Dieldrin (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| DDT + DDE + DDD (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Vic EPA IWRG 621 OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Dibutylchlorendate (surr.) | 1 | % | 82 | 72 | 101 | 122 |
| Tetrachloro-m-xylene (surr.) | 1 | % | 117 | 114 | 99 | 110 |
| **Organophosphorus Pesticides** | | | | | | |
| Azinphos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Bolstar | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chlorfenvinphos | 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 |
| Chlorpyrifos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Coumaphos | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Demeton-S | 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 |
| Dimethoate | 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 |
| EPN | 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 |
| Ethyl parathion | 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 |
| Malathion | 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 |

| Client Sample ID | | | TP07_0.2 | TP07_0.6 | TP07_1.1 | TP11_0.2 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins \| mgt Sample No. | | | S18-De08412 | S18-De08413 | S18-De08414 | S18-De08415 |
| Date Sampled | | | Dec 06, 2018 | Dec 06, 2018 | Dec 06, 2018 | Dec 06, 2018 |
| Test/Reference | LOR | Unit | | | | |
| **Organophosphorus Pesticides** | | | | | | |
| 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 |
| Monocrotophos | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Naled | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Omethoate | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Phorate | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Pirimiphos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Pyrazophos | 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 |
| Terbufos | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Tetrachlorvinphos | 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 | % | 112 | 89 | 74 | 69 |
| **Triazines** | | | | | | |
| Ametryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Atraton | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Atrazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Prometon | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Prometryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Propazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Simazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Simetryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Terbuthylazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Terbutryne | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| **Carbamate Pesticides** | | | | | | |
| Aldicarb | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Bendiocarb | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Carbaryl | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Carbofuran | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Methomyl | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Oxamyl | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Thiobencarb | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| **Synthetic Pyrethroids*** | | | | | | |
| Allethrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Cyfluthrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Cypermethrin (total)* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Fenvalerate* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Permethrin | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Phenothrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Resmethrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Tetramethrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 310 | 40 | 14 | 1400 |
| Cadmium | 0.4 | mg/kg | < 0.4 | < 0.4 | < 0.4 | < 0.4 |
| Chromium | 5 | mg/kg | 16 | 13 | 9.4 | 18 |
| Copper | 5 | mg/kg | 56 | 47 | 46 | 53 |
| Lead | 5 | mg/kg | 47 | 12 | 12 | 22 |
| Mercury | 0.1 | mg/kg | 0.1 | < 0.1 | < 0.1 | < 0.1 |

| Client Sample ID | | | TP07_0.2 | TP07_0.6 | TP07_1.1 | TP11_0.2 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins \| mgt Sample No. | | | S18-De08412 | S18-De08413 | S18-De08414 | S18-De08415 |
| Date Sampled | | | Dec 06, 2018 | Dec 06, 2018 | Dec 06, 2018 | Dec 06, 2018 |
| Test/Reference | LOR | Unit | | | | |
| **Heavy Metals** | | | | | | |
| Nickel | 5 | mg/kg | 15 | 14 | 13 | 14 |
| Zinc | 5 | mg/kg | 360 | 80 | 70 | 240 |
| | | | | | | |
| % Moisture | 1 | % | 15 | 8.2 | 8.0 | 15 |

| Client Sample ID | | | TP11_0.6 | TP11_1.1 | TP12_0.2 | TP12_0.6 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins \| mgt Sample No. | | | S18-De08416 | S18-De08417 | S18-De08418 | S18-De08419 |
| Date Sampled | | | Dec 06, 2018 | Dec 06, 2018 | Dec 06, 2018 | Dec 06, 2018 |
| Test/Reference | LOR | Unit | | | | |
| **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 |
| Aldrin and Dieldrin (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| DDT + DDE + DDD (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Vic EPA IWRG 621 OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Dibutylchlorendate (surr.) | 1 | % | 64 | 107 | 71 | 74 |
| Tetrachloro-m-xylene (surr.) | 1 | % | 91 | 107 | 109 | 123 |
| **Organophosphorus Pesticides** | | | | | | |
| Azinphos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Bolstar | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chlorfenvinphos | 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 |
| Chlorpyrifos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Coumaphos | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Demeton-S | 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 |

| Client Sample ID | | | TP11_0.6 | TP11_1.1 | TP12_0.2 | TP12_0.6 |
|---|---|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil | Soil | Soil |
| Eurofins \| mgt Sample No. | | | S18-De08416 | S18-De08417 | S18-De08418 | S18-De08419 |
| Date Sampled | | | Dec 06, 2018 | Dec 06, 2018 | Dec 06, 2018 | Dec 06, 2018 |
| Test/Reference | LOR | Unit | | | | |
| **Organophosphorus Pesticides** | | | | | | |
| Dichlorvos | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Dimethoate | 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 |
| EPN | 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 |
| Ethyl parathion | 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 |
| Malathion | 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 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 |
| Monocrotophos | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Naled | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Omethoate | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Phorate | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Pirimiphos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Pyrazophos | 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 |
| Terbufos | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Tetrachlorvinphos | 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 | % | 95 | 83 | 83 | 83 |
| **Triazines** | | | | | | |
| Ametryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Atraton | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Atrazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Prometon | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Prometryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Propazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Simazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Simetryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Terbuthylazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Terbutryne | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| **Carbamate Pesticides** | | | | | | |
| Aldicarb | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Bendiocarb | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Carbaryl | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Carbofuran | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Methomyl | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Oxamyl | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Thiobencarb | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |

| Client Sample ID | | | TP11_0.6 | TP11_1.1 | TP12_0.2 | TP12_0.6 |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins \| mgt Sample No.** | | | **S18-De08416** | **S18-De08417** | **S18-De08418** | **S18-De08419** |
| **Date Sampled** | | | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** |
| Test/Reference | LOR | Unit | | | | |
| **Synthetic Pyrethroids*** | | | | | | |
| Allethrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Cyfluthrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Cypermethrin (total)* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Fenvalerate* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Permethrin | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Phenothrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Resmethrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Tetramethrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 210 | 310 | 1000 | 120 |
| Cadmium | 0.4 | mg/kg | < 0.4 | < 0.4 | < 0.4 | < 0.4 |
| Chromium | 5 | mg/kg | 12 | 11 | 16 | 9.4 |
| Copper | 5 | mg/kg | 53 | 46 | 49 | 42 |
| Lead | 5 | mg/kg | 12 | 15 | 22 | 10 |
| Mercury | 0.1 | mg/kg | < 0.1 | < 0.1 | 0.3 | < 0.1 |
| Nickel | 5 | mg/kg | 23 | 13 | 13 | 15 |
| Zinc | 5 | mg/kg | 210 | 110 | 190 | 77 |
| | | | | | | |
| % Moisture | 1 | % | 8.6 | 8.0 | 14 | 5.9 |

| Client Sample ID | | | TP12_1.1 | QC1 | QC3 | QC4 |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins \| mgt Sample No.** | | | **S18-De08420** | **S18-De08421** | **S18-De08422** | **S18-De08423** |
| **Date Sampled** | | | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** |
| Test/Reference | LOR | Unit | | | | |
| **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 |
| Aldrin and Dieldrin (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |

| Client Sample ID | | | TP12_1.1 | QC1 | QC3 | QC4 |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins \| mgt Sample No.** | | | **S18-De08420** | **S18-De08421** | **S18-De08422** | **S18-De08423** |
| **Date Sampled** | | | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** |
| Test/Reference | LOR | Unit | | | | |
| **Organochlorine Pesticides** | | | | | | |
| DDT + DDE + DDD (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Vic EPA IWRG 621 OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Dibutylchlorendate (surr.) | 1 | % | 114 | 93 | 106 | 111 |
| Tetrachloro-m-xylene (surr.) | 1 | % | 55 | 98 | 56 | 62 |
| **Organophosphorus Pesticides** | | | | | | |
| Azinphos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Bolstar | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chlorfenvinphos | 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 |
| Chlorpyrifos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Coumaphos | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Demeton-S | 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 |
| Dimethoate | 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 |
| EPN | 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 |
| Ethyl parathion | 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 |
| Malathion | 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 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 |
| Monocrotophos | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Naled | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Omethoate | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Phorate | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Pirimiphos-methyl | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Pyrazophos | 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 |
| Terbufos | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Tetrachlorvinphos | 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 | 88 | 99 | 80 |
| **Triazines** | | | | | | |
| Ametryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Atraton | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Atrazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Prometon | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Prometryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Propazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Simazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |

| Client Sample ID | | | TP12_1.1 | QC1 | QC3 | QC4 |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins \| mgt Sample No.** | | | **S18-De08420** | **S18-De08421** | **S18-De08422** | **S18-De08423** |
| **Date Sampled** | | | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** |
| Test/Reference | LOR | Unit | | | | |
| **Triazines** | | | | | | |
| Simetryn | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Terbuthylazine | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Terbutryne | 0.2 | mg/kg | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| **Carbamate Pesticides** | | | | | | |
| Aldicarb | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Bendiocarb | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Carbaryl | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Carbofuran | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Methomyl | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Oxamyl | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Thiobencarb | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| **Synthetic Pyrethroids*** | | | | | | |
| Allethrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Cyfluthrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Cypermethrin (total)* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Fenvalerate* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Permethrin | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Phenothrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Resmethrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| Tetramethrin* | 2 | mg/kg | < 2 | < 2 | < 2 | < 2 |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 460 | 770 | 1300 | 180 |
| Cadmium | 0.4 | mg/kg | < 0.4 | 2.0 | < 0.4 | < 0.4 |
| Chromium | 5 | mg/kg | 12 | 14 | 17 | 9.8 |
| Copper | 5 | mg/kg | 45 | 56 | 50 | 43 |
| Lead | 5 | mg/kg | 12 | 110 | 19 | 11 |
| Mercury | 0.1 | mg/kg | < 0.1 | 0.8 | < 0.1 | < 0.1 |
| Nickel | 5 | mg/kg | 13 | 11 | 13 | 17 |
| Zinc | 5 | mg/kg | 110 | 910 | 240 | 81 |
| | | | | | | |
| % Moisture | 1 | % | 9.0 | 20 | 16 | 7.3 |

| Client Sample ID | | | QC5 | QC7 |
|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** |
| **Eurofins \| mgt Sample No.** | | | **S18-De08424** | **S18-De08425** |
| **Date Sampled** | | | **Dec 06, 2018** | **Dec 06, 2018** |
| Test/Reference | LOR | Unit | | |
| **Organochlorine Pesticides** | | | | |
| Chlordanes - Total | 0.1 | mg/kg | < 0.1 | < 0.1 |
| 4.4'-DDD | 0.05 | mg/kg | < 0.05 | < 0.05 |
| 4.4'-DDE | 0.05 | mg/kg | < 0.05 | < 0.05 |
| 4.4'-DDT | 0.05 | mg/kg | < 0.05 | < 0.05 |
| a-BHC | 0.05 | mg/kg | < 0.05 | < 0.05 |
| Aldrin | 0.05 | mg/kg | < 0.05 | < 0.05 |
| b-BHC | 0.05 | mg/kg | < 0.05 | < 0.05 |
| d-BHC | 0.05 | mg/kg | < 0.05 | < 0.05 |
| Dieldrin | 0.05 | mg/kg | < 0.05 | < 0.05 |
| Endosulfan I | 0.05 | mg/kg | < 0.05 | < 0.05 |

| Client Sample ID | | | QC5 | QC7 |
|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil |
| Eurofins \| mgt Sample No. | | | S18-De08424 | S18-De08425 |
| Date Sampled | | | Dec 06, 2018 | Dec 06, 2018 |
| Test/Reference | LOR | Unit | | |
| **Organochlorine Pesticides** | | | | |
| Endosulfan II | 0.05 | mg/kg | < 0.05 | < 0.05 |
| Endosulfan sulphate | 0.05 | mg/kg | < 0.05 | < 0.05 |
| Endrin | 0.05 | mg/kg | < 0.05 | < 0.05 |
| Endrin aldehyde | 0.05 | mg/kg | < 0.05 | < 0.05 |
| Endrin ketone | 0.05 | mg/kg | < 0.05 | < 0.05 |
| g-BHC (Lindane) | 0.05 | mg/kg | < 0.05 | < 0.05 |
| Heptachlor | 0.05 | mg/kg | < 0.05 | < 0.05 |
| Heptachlor epoxide | 0.05 | mg/kg | < 0.05 | < 0.05 |
| Hexachlorobenzene | 0.05 | mg/kg | < 0.05 | < 0.05 |
| Methoxychlor | 0.05 | mg/kg | < 0.05 | < 0.05 |
| Toxaphene | 1 | mg/kg | < 1 | < 1 |
| Aldrin and Dieldrin (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 |
| DDT + DDE + DDD (Total)* | 0.05 | mg/kg | < 0.05 | < 0.05 |
| Vic EPA IWRG 621 OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.1 | mg/kg | < 0.1 | < 0.1 |
| Dibutylchlorendate (surr.) | 1 | % | 96 | 82 |
| Tetrachloro-m-xylene (surr.) | 1 | % | 51 | 99 |
| **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 |

| Client Sample ID | | | QC5 | QC7 |
|---|---|---|---|---|
| Sample Matrix | | | Soil | Soil |
| Eurofins \| mgt Sample No. | | | S18-De08424 | S18-De08425 |
| Date Sampled | | | Dec 06, 2018 | Dec 06, 2018 |
| Test/Reference | LOR | Unit | | |
| **Organophosphorus Pesticides** | | | | |
| 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 | % | 86 | 61 |
| **Triazines** | | | | |
| Ametryn | 0.2 | mg/kg | < 0.2 | < 0.2 |
| Atraton | 0.2 | mg/kg | < 0.2 | < 0.2 |
| Atrazine | 0.2 | mg/kg | < 0.2 | < 0.2 |
| Prometon | 0.2 | mg/kg | < 0.2 | < 0.2 |
| Prometryn | 0.2 | mg/kg | < 0.2 | < 0.2 |
| Propazine | 0.2 | mg/kg | < 0.2 | < 0.2 |
| Simazine | 0.2 | mg/kg | < 0.2 | < 0.2 |
| Simetryn | 0.2 | mg/kg | < 0.2 | < 0.2 |
| Terbuthylazine | 0.2 | mg/kg | < 0.2 | < 0.2 |
| Terbutryne | 0.2 | mg/kg | < 0.2 | < 0.2 |
| **Carbamate Pesticides** | | | | |
| Aldicarb | 2 | mg/kg | < 2 | < 2 |
| Bendiocarb | 2 | mg/kg | < 2 | < 2 |
| Carbaryl | 2 | mg/kg | < 2 | < 2 |
| Carbofuran | 2 | mg/kg | < 2 | < 2 |
| Methomyl | 2 | mg/kg | < 2 | < 2 |
| Oxamyl | 2 | mg/kg | < 2 | < 2 |
| Thiobencarb | 2 | mg/kg | < 2 | < 2 |
| **Synthetic Pyrethroids*** | | | | |
| Allethrin* | 2 | mg/kg | < 2 | < 2 |
| Cyfluthrin* | 2 | mg/kg | < 2 | < 2 |
| Cypermethrin (total)* | 2 | mg/kg | < 2 | < 2 |
| Fenvalerate* | 2 | mg/kg | < 2 | < 2 |
| Permethrin | 2 | mg/kg | < 2 | < 2 |
| Phenothrin* | 2 | mg/kg | < 2 | < 2 |
| Resmethrin* | 2 | mg/kg | < 2 | < 2 |
| Tetramethrin* | 2 | mg/kg | < 2 | < 2 |
| **Heavy Metals** | | | | |
| Arsenic | 2 | mg/kg | 400 | 36 |
| Cadmium | 0.4 | mg/kg | < 0.4 | < 0.4 |
| Chromium | 5 | mg/kg | 14 | 11 |
| Copper | 5 | mg/kg | 50 | 43 |
| Lead | 5 | mg/kg | 36 | 9.8 |
| Mercury | 0.1 | mg/kg | 0.3 | < 0.1 |
| Nickel | 5 | mg/kg | 13 | 12 |
| Zinc | 5 | mg/kg | 180 | 65 |
| | | | | |
| % Moisture | 1 | % | 14 | 8.1 |

## Sample History

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

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

| Description | Testing Site | Extracted | Holding Time |
|---|---|---|---|
| Eurofins \| mgt Suite B14 | | | |
| Organochlorine Pesticides | Melbourne | Dec 13, 2018 | 14 Day |
| - Method: LTM-ORG-2220 OCP & PCB in Soil and Water | | | |
| Organophosphorus Pesticides | Melbourne | Dec 13, 2018 | 14 Day |
| - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS | | | |
| Triazines | Melbourne | Dec 13, 2018 | 14 Day |
| - Method: LTM-ORG-2080 | | | |
| Carbamate Pesticides | Melbourne | Dec 13, 2018 | 14 Day |
| - Method: LTM-ORG-2290 Carbamates in waters and soils by HPLC | | | |
| Synthetic Pyrethroids* | Melbourne | Dec 13, 2018 | 14 Day |
| - Method: LTM-ORG-2170 Synthetic Pyrethroids by HPLC-UV | | | |
| Metals M8 | Melbourne | Dec 13, 2018 | 28 Days |
| - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS | | | |
| % Moisture | Melbourne | Dec 07, 2018 | 14 Day |
| - Method: LTM-GEN-7080 Moisture | | | |

eurofins | mgt

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

**Melbourne**
2-5 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

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

**Company Name:** SLR Consulting (Sydney)
**Address:** 2 Lincoln St
Lane Cove West
NSW 2066

**Project Name:** PROTEN TAMWORTH SCA
**Project ID:** 610.18456.00100

**Order No.:**
**Report #:** 631838
**Phone:** 02 9428 8100
**Fax:**

**Received:** Dec 7, 2018 2:21 PM
**Due:** Dec 14, 2018
**Priority:** 5 Day
**Contact Name:** Junaidi Ibrahim

**Eurofins | mgt Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | HOLD | Triazines | Carbamate Pesticides | Synthetic Pyrethroids* | Metals M8 | Eurofins \| mgt Suite B14 | Moisture Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | X | X | X | X | X | X | X |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | | | | | | |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | | | | | | |
| 1 | TP01_0.1 | Dec 06, 2018 | | Soil | S18-De08338 | | X | X | X | X | X | X |
| 2 | TP01_0.7 | Dec 06, 2018 | | Soil | S18-De08339 | | X | X | X | X | X | X |
| 3 | TP01_1.2 | Dec 06, 2018 | | Soil | S18-De08340 | | X | X | X | X | X | X |
| 4 | TP16_0.2 | Dec 06, 2018 | | Soil | S18-De08341 | | X | X | X | X | X | X |
| 5 | TP16_0.6 | Dec 06, 2018 | | Soil | S18-De08342 | | X | X | X | X | X | X |
| 6 | TP16_1.1 | Dec 06, 2018 | | Soil | S18-De08343 | | X | X | X | X | X | X |
| 7 | TP02_0.2 | Dec 06, 2018 | | Soil | S18-De08406 | | X | X | X | X | X | X |
| 8 | TP02_0.7 | Dec 06, 2018 | | Soil | S18-De08407 | | X | X | X | X | X | X |
| 9 | TP02_1.2 | Dec 06, 2018 | | Soil | S18-De08408 | | X | X | X | X | X | X |

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

**Melbourne**
2-5 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

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

**Company Name:** SLR Consulting (Sydney)
**Address:** 2 Lincoln St
Lane Cove West
NSW 2066

**Project Name:** PROTEN TAMWORTH SCA
**Project ID:** 610.18456.00100

**Order No.:**
**Report #:** 631838
**Phone:** 02 9428 8100
**Fax:**

**Received:** Dec 7, 2018 2:21 PM
**Due:** Dec 14, 2018
**Priority:** 5 Day
**Contact Name:** Junaidi Ibrahim

**Eurofins | mgt Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | HOLD | Triazines | Carbamate Pesticides | Synthetic Pyrethroids* | Metals M8 | Eurofins \| mgt Suite B14 | Moisture Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | X | X | X | X | X | X | X |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | | | | | | |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | |
| 10 | TP06_0.2 | Dec 06, 2018 | | Soil | S18-De08409 | | X | X | X | X | X | X |
| 11 | TP06_0.6 | Dec 06, 2018 | | Soil | S18-De08410 | | X | X | X | X | X | X |
| 12 | TP06_1.1 | Dec 06, 2018 | | Soil | S18-De08411 | | X | X | X | X | X | X |
| 13 | TP07_0.2 | Dec 06, 2018 | | Soil | S18-De08412 | | X | X | X | X | X | X |
| 14 | TP07_0.6 | Dec 06, 2018 | | Soil | S18-De08413 | | X | X | X | X | X | X |
| 15 | TP07_1.1 | Dec 06, 2018 | | Soil | S18-De08414 | | X | X | X | X | X | X |
| 16 | TP11_0.2 | Dec 06, 2018 | | Soil | S18-De08415 | | X | X | X | X | X | X |
| 17 | TP11_0.6 | Dec 06, 2018 | | Soil | S18-De08416 | | X | X | X | X | X | X |
| 18 | TP11_1.1 | Dec 06, 2018 | | Soil | S18-De08417 | | X | X | X | X | X | X |
| 19 | TP12_0.2 | Dec 06, 2018 | | Soil | S18-De08418 | | X | X | X | X | X | X |
| 20 | TP12_0.6 | Dec 06, 2018 | | Soil | S18-De08419 | | X | X | X | X | X | X |
| 21 | TP12_1.1 | Dec 06, 2018 | | Soil | S18-De08420 | | X | X | X | X | X | X |

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

**Melbourne**
2-5 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

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

**Company Name:** SLR Consulting (Sydney)
**Address:** 2 Lincoln St
Lane Cove West
NSW 2066

**Project Name:** PROTEN TAMWORTH SCA
**Project ID:** 610.18456.00100

**Order No.:**
**Report #:** 631838
**Phone:** 02 9428 8100
**Fax:**

**Received:** Dec 7, 2018 2:21 PM
**Due:** Dec 14, 2018
**Priority:** 5 Day
**Contact Name:** Junaidi Ibrahim

**Eurofins | mgt Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | HOLD | Triazines | Carbamate Pesticides | Synthetic Pyrethroids* | Metals M8 | Eurofins \| mgt Suite B14 | Moisture Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | X | X | X | X | X | X | X |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | | | | | | |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | |
| 22 | QC1 | Dec 06, 2018 | | Soil | S18-De08421 | | X | X | X | X | X | X |
| 23 | QC3 | Dec 06, 2018 | | Soil | S18-De08422 | | X | X | X | X | X | X |
| 24 | QC4 | Dec 06, 2018 | | Soil | S18-De08423 | | X | X | X | X | X | X |
| 25 | QC5 | Dec 06, 2018 | | Soil | S18-De08424 | | X | X | X | X | X | X |
| 26 | QC7 | Dec 06, 2018 | | Soil | S18-De08425 | | X | X | X | X | X | X |
| 27 | R01 | Dec 06, 2018 | | Water | S18-De08426 | | | | | X | | |
| 28 | R02 | Dec 06, 2018 | | Water | S18-De08427 | | X | X | X | | X | |
| 29 | TP17_0.1 | Dec 06, 2018 | | Soil | S18-De08428 | X | | | | | | |
| 30 | TP17_0.8 | Dec 06, 2018 | | Soil | S18-De08429 | X | | | | | | |
| 31 | TP17_1.2 | Dec 06, 2018 | | Soil | S18-De08430 | X | | | | | | |
| 32 | TP03_0.2 | Dec 06, 2018 | | Soil | S18-De08431 | X | | | | | | |
| 33 | TP03_0.6 | Dec 06, 2018 | | Soil | S18-De08432 | X | | | | | | |

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

**Melbourne**
2-5 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

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

**Company Name:** SLR Consulting (Sydney)
**Address:** 2 Lincoln St
Lane Cove West
NSW 2066

**Project Name:** PROTEN TAMWORTH SCA
**Project ID:** 610.18456.00100

**Order No.:**
**Report #:** 631838
**Phone:** 02 9428 8100
**Fax:**

**Received:** Dec 7, 2018 2:21 PM
**Due:** Dec 14, 2018
**Priority:** 5 Day
**Contact Name:** Junaidi Ibrahim

**Eurofins | mgt Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | HOLD | Triazines | Carbamate Pesticides | Synthetic Pyrethroids* | Metals M8 | Eurofins \| mgt Suite B14 | Moisture Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | X | X | X | X | X | X | X |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | | | | | | |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | |
| 34 | TP03_1.1 | Dec 06, 2018 | | Soil | S18-De08433 | X | | | | | | |
| 35 | TP04_0.2 | Dec 06, 2018 | | Soil | S18-De08434 | X | | | | | | |
| 36 | TP04_0.7 | Dec 06, 2018 | | Soil | S18-De08435 | X | | | | | | |
| 37 | TP04_1.1 | Dec 06, 2018 | | Soil | S18-De08436 | X | | | | | | |
| 38 | TP05_0.2 | Dec 06, 2018 | | Soil | S18-De08437 | X | | | | | | |
| 39 | TP05_0.6 | Dec 06, 2018 | | Soil | S18-De08438 | X | | | | | | |
| 40 | TP05_1.1 | Dec 06, 2018 | | Soil | S18-De08439 | X | | | | | | |
| 41 | TP08_0.1 | Dec 06, 2018 | | Soil | S18-De08440 | X | | | | | | |
| 42 | TP08_0.5 | Dec 06, 2018 | | Soil | S18-De08441 | X | | | | | | |
| 43 | TP08_1.0 | Dec 06, 2018 | | Soil | S18-De08442 | X | | | | | | |
| 44 | TP09_0.1 | Dec 06, 2018 | | Soil | S18-De08443 | X | | | | | | |
| 45 | TP09_0.5 | Dec 06, 2018 | | Soil | S18-De08444 | X | | | | | | |

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

**Melbourne**
2-5 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

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

**Company Name:** SLR Consulting (Sydney)
**Address:** 2 Lincoln St
Lane Cove West
NSW 2066

**Project Name:** PROTEN TAMWORTH SCA
**Project ID:** 610.18456.00100

**Order No.:**
**Report #:** 631838
**Phone:** 02 9428 8100
**Fax:**

**Received:** Dec 7, 2018 2:21 PM
**Due:** Dec 14, 2018
**Priority:** 5 Day
**Contact Name:** Junaidi Ibrahim

**Eurofins | mgt Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | HOLD | Triazines | Carbamate Pesticides | Synthetic Pyrethroids* | Metals M8 | Eurofins \| mgt Suite B14 | Moisture Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | X | X | X | X | X | X | X |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | | | | | | |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | |
| 46 | TP09_0.9 | Dec 06, 2018 | | Soil | S18-De08445 | X | | | | | | |
| 47 | TP10_0.1 | Dec 06, 2018 | | Soil | S18-De08446 | X | | | | | | |
| 48 | TP10_0.4 | Dec 06, 2018 | | Soil | S18-De08447 | X | | | | | | |
| 49 | TP10_0.8 | Dec 06, 2018 | | Soil | S18-De08448 | X | | | | | | |
| 50 | TP13_0.2 | Dec 06, 2018 | | Soil | S18-De08449 | X | | | | | | |
| 51 | TP13_0.6 | Dec 06, 2018 | | Soil | S18-De08450 | X | | | | | | |
| 52 | TP13_1.0 | Dec 06, 2018 | | Soil | S18-De08451 | X | | | | | | |
| 53 | TP14_0.2 | Dec 06, 2018 | | Soil | S18-De08452 | X | | | | | | |
| 54 | TP14_0.6 | Dec 06, 2018 | | Soil | S18-De08453 | X | | | | | | |
| 55 | TP14_1.1 | Dec 06, 2018 | | Soil | S18-De08454 | X | | | | | | |
| 56 | TP15_0.2 | Dec 06, 2018 | | Soil | S18-De08455 | X | | | | | | |
| 57 | TP15_0.7 | Dec 06, 2018 | | Soil | S18-De08456 | X | | | | | | |

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

**Melbourne**
2-5 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

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

**Company Name:** SLR Consulting (Sydney)
**Address:** 2 Lincoln St
Lane Cove West
NSW 2066

**Project Name:** PROTEN TAMWORTH SCA
**Project ID:** 610.18456.00100

**Order No.:**
**Report #:** 631838
**Phone:** 02 9428 8100
**Fax:**

**Received:** Dec 7, 2018 2:21 PM
**Due:** Dec 14, 2018
**Priority:** 5 Day
**Contact Name:** Junaidi Ibrahim

**Eurofins | mgt Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | HOLD | Triazines | Carbamate Pesticides | Synthetic Pyrethroids* | Metals M8 | Eurofins \| mgt Suite B14 | Moisture Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | X | X | X | X | X | X | X |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | | | | | | |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | |
| 58 | TP15_1.2 | Dec 06, 2018 | | Soil | S18-De08457 | X | | | | | | |
| 59 | TS | Dec 06, 2018 | | Soil | S18-De08522 | X | | | | | | |
| 60 | TB | Dec 06, 2018 | | Soil | S18-De08523 | X | | | | | | |
| 61 | LAB SPIKE | Dec 06, 2018 | | Soil | S18-De08524 | X | | | | | | |
| **Test Counts** | | | | | | 33 | 27 | 27 | 27 | 27 | 27 | 26 |

## 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. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

### Holding Times

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

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

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

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

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

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

### Units

**mg/kg:** milligrams per kilogram

**mg/L:** milligrams per litre

**ug/L:** micrograms per litre

**ppm:** Parts per million

**ppb:** Parts per billion

**%:** Percentage

**org/100mL:** Organisms per 100 millilitres

**NTU:** Nephelometric Turbidity Units

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

### Terms

| | |
|---|---|
| **Dry** | Where a moisture has been determined on a solid sample the result is expressed on a dry basis. |
| **LOR** | Limit of Reporting. |
| **SPIKE** | Addition of the analyte to the sample and reported as percentage recovery. |
| **RPD** | Relative Percent Difference between two Duplicate pieces of analysis. |
| **LCS** | Laboratory Control Sample - reported as percent recovery. |
| **CRM** | Certified Reference Material - reported as percent recovery. |
| **Method Blank** | In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water. |
| **Surr - Surrogate** | The addition of a like compound to the analyte target and reported as percentage recovery. |
| **Duplicate** | A second piece of analysis from the same sample and reported in the same units as the result to show comparison. |
| **USEPA** | United States Environmental Protection Agency |
| **APHA** | American Public Health Association |
| **TCLP** | Toxicity Characteristic Leaching Procedure |
| **COC** | Chain of Custody |
| **SRA** | Sample Receipt Advice |
| **QSM** | Quality Systems Manual ver 5.1 US Department of Defense |
| **CP** | Client Parent - QC was performed on samples pertaining to this report |
| **NCP** | Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within. |
| **TEQ** | Toxic Equivalency Quotient |

### QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

### QC Data General Comments

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

**Quality Control Results**

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| **Method Blank** | | | | | | | |
| **Organochlorine Pesticides** | | | | | | | |
| Chlordanes - Total | mg/kg | < 0.1 | | | 0.1 | Pass | |
| 4.4'-DDD | mg/kg | < 0.05 | | | 0.05 | Pass | |
| 4.4'-DDE | mg/kg | < 0.05 | | | 0.05 | Pass | |
| 4.4'-DDT | mg/kg | < 0.05 | | | 0.05 | Pass | |
| a-BHC | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Aldrin | mg/kg | < 0.05 | | | 0.05 | Pass | |
| b-BHC | mg/kg | < 0.05 | | | 0.05 | Pass | |
| d-BHC | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Dieldrin | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endosulfan I | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endosulfan II | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endosulfan sulphate | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endrin | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endrin aldehyde | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Endrin ketone | mg/kg | < 0.05 | | | 0.05 | Pass | |
| g-BHC (Lindane) | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Heptachlor | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Heptachlor epoxide | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Hexachlorobenzene | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Methoxychlor | mg/kg | < 0.05 | | | 0.05 | Pass | |
| Toxaphene | mg/kg | < 1 | | | 1 | Pass | |
| **Method Blank** | | | | | | | |
| **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 | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| 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** | | | | | | | |
| **Triazines** | | | | | | | |
| Ametryn | mg/kg | < 0.2 | | | 0.2 | Pass | |
| Atraton | mg/kg | < 0.2 | | | 0.2 | Pass | |
| Atrazine | mg/kg | < 0.2 | | | 0.2 | Pass | |
| Prometon | mg/kg | < 0.2 | | | 0.2 | Pass | |
| Prometryn | mg/kg | < 0.2 | | | 0.2 | Pass | |
| Propazine | mg/kg | < 0.2 | | | 0.2 | Pass | |
| Simazine | mg/kg | < 0.2 | | | 0.2 | Pass | |
| Simetryn | mg/kg | < 0.2 | | | 0.2 | Pass | |
| Terbuthylazine | mg/kg | < 0.2 | | | 0.2 | Pass | |
| Terbutryne | mg/kg | < 0.2 | | | 0.2 | Pass | |
| **Method Blank** | | | | | | | |
| **Carbamate Pesticides** | | | | | | | |
| Aldicarb | mg/kg | < 2 | | | 2 | Pass | |
| Bendiocarb | mg/kg | < 2 | | | 2 | Pass | |
| Carbaryl | mg/kg | < 2 | | | 2 | Pass | |
| Carbofuran | mg/kg | < 2 | | | 2 | Pass | |
| Methomyl | mg/kg | < 2 | | | 2 | Pass | |
| Oxamyl | mg/kg | < 2 | | | 2 | Pass | |
| Thiobencarb | mg/kg | < 2 | | | 2 | Pass | |
| **Method Blank** | | | | | | | |
| **Synthetic Pyrethroids*** | | | | | | | |
| Allethrin* | mg/kg | < 2 | | | 2 | Pass | |
| Cyfluthrin* | mg/kg | < 2 | | | 2 | Pass | |
| Cypermethrin (total)* | mg/kg | < 2 | | | 2 | Pass | |
| Fenvalerate* | mg/kg | < 2 | | | 2 | Pass | |
| Permethrin | mg/kg | < 2 | | | 2 | Pass | |
| Phenothrin* | mg/kg | < 2 | | | 2 | Pass | |
| Resmethrin* | mg/kg | < 2 | | | 2 | Pass | |
| Tetramethrin* | mg/kg | < 2 | | | 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** | | | | | | | |
| **Organochlorine Pesticides** | | | | | | | |
| Chlordanes - Total | % | 77 | | | 70-130 | Pass | |
| 4.4'-DDD | % | 71 | | | 70-130 | Pass | |
| 4.4'-DDE | % | 119 | | | 70-130 | Pass | |
| 4.4'-DDT | % | 73 | | | 70-130 | Pass | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| a-BHC | % | 124 | | | 70-130 | Pass | |
| Aldrin | % | 112 | | | 70-130 | Pass | |
| b-BHC | % | 101 | | | 70-130 | Pass | |
| d-BHC | % | 123 | | | 70-130 | Pass | |
| Dieldrin | % | 115 | | | 70-130 | Pass | |
| Endosulfan I | % | 121 | | | 70-130 | Pass | |
| Endosulfan II | % | 123 | | | 70-130 | Pass | |
| Endosulfan sulphate | % | 113 | | | 70-130 | Pass | |
| Endrin | % | 104 | | | 70-130 | Pass | |
| Endrin aldehyde | % | 118 | | | 70-130 | Pass | |
| Endrin ketone | % | 101 | | | 70-130 | Pass | |
| g-BHC (Lindane) | % | 117 | | | 70-130 | Pass | |
| Heptachlor | % | 86 | | | 70-130 | Pass | |
| Heptachlor epoxide | % | 116 | | | 70-130 | Pass | |
| Hexachlorobenzene | % | 128 | | | 70-130 | Pass | |
| Methoxychlor | % | 99 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Organophosphorus Pesticides** | | | | | | | |
| Diazinon | % | 86 | | | 70-130 | Pass | |
| Dimethoate | % | 76 | | | 70-130 | Pass | |
| Ethion | % | 104 | | | 70-130 | Pass | |
| Fenitrothion | % | 100 | | | 70-130 | Pass | |
| Methyl parathion | % | 100 | | | 70-130 | Pass | |
| Mevinphos | % | 84 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Carbamate Pesticides** | | | | | | | |
| Aldicarb | % | 110 | | | 70-130 | Pass | |
| Bendiocarb | % | 98 | | | 70-130 | Pass | |
| Carbaryl | % | 125 | | | 70-130 | Pass | |
| Carbofuran | % | 98 | | | 70-130 | Pass | |
| Methomyl | % | 110 | | | 70-130 | Pass | |
| Oxamyl | % | 98 | | | 70-130 | Pass | |
| Thiobencarb | % | 107 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Synthetic Pyrethroids*** | | | | | | | |
| Allethrin* | % | 88 | | | 70-130 | Pass | |
| Cyfluthrin* | % | 93 | | | 70-130 | Pass | |
| Cypermethrin (total)* | % | 95 | | | 70-130 | Pass | |
| Fenvalerate* | % | 96 | | | 70-130 | Pass | |
| Permethrin | % | 103 | | | 70-130 | Pass | |
| Phenothrin* | % | 119 | | | 70-130 | Pass | |
| Resmethrin* | % | 125 | | | 70-130 | Pass | |
| Tetramethrin* | % | 104 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Heavy Metals** | | | | | | | |
| Arsenic | % | 103 | | | 80-120 | Pass | |
| Cadmium | % | 99 | | | 80-120 | Pass | |
| Chromium | % | 112 | | | 80-120 | Pass | |
| Copper | % | 110 | | | 80-120 | Pass | |
| Lead | % | 113 | | | 80-120 | Pass | |
| Mercury | % | 99 | | | 75-125 | Pass | |
| Nickel | % | 105 | | | 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** | | | | | | | | | |
| **Organochlorine Pesticides** | | | | Result 1 | | | | | |
| Hexachlorobenzene | S18-De11597 | NCP | % | 130 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Organochlorine Pesticides** | | | | Result 1 | | | | | |
| 4.4'-DDD | M18-De14369 | NCP | % | 74 | | | 70-130 | Pass | |
| 4.4'-DDE | M18-De10670 | NCP | % | 79 | | | 70-130 | Pass | |
| 4.4'-DDT | M18-De10670 | NCP | % | 79 | | | 70-130 | Pass | |
| Dieldrin | M18-De10670 | NCP | % | 96 | | | 70-130 | Pass | |
| Heptachlor | M18-De10670 | NCP | % | 98 | | | 70-130 | Pass | |
| Methoxychlor | M18-De10670 | NCP | % | 81 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Organophosphorus Pesticides** | | | | Result 1 | | | | | |
| Dimethoate | M18-De16675 | NCP | % | 73 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Organophosphorus Pesticides** | | | | Result 1 | | | | | |
| Diazinon | S18-De08343 | CP | % | 96 | | | 70-130 | Pass | |
| Ethion | S18-De08343 | CP | % | 114 | | | 70-130 | Pass | |
| Fenitrothion | S18-De08343 | CP | % | 86 | | | 70-130 | Pass | |
| Methyl parathion | S18-De08343 | CP | % | 75 | | | 70-130 | Pass | |
| Mevinphos | S18-De08343 | CP | % | 91 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Organochlorine Pesticides** | | | | Result 1 | | | | | |
| Chlordanes - Total | S18-De08409 | CP | % | 120 | | | 70-130 | Pass | |
| a-BHC | S18-De08409 | CP | % | 116 | | | 70-130 | Pass | |
| Aldrin | S18-De08409 | CP | % | 101 | | | 70-130 | Pass | |
| b-BHC | S18-De08409 | CP | % | 111 | | | 70-130 | Pass | |
| d-BHC | S18-De08409 | CP | % | 110 | | | 70-130 | Pass | |
| Endosulfan I | S18-De08409 | CP | % | 116 | | | 70-130 | Pass | |
| Endosulfan II | S18-De08409 | CP | % | 122 | | | 70-130 | Pass | |
| Endosulfan sulphate | S18-De08409 | CP | % | 103 | | | 70-130 | Pass | |
| Endrin | S18-De08409 | CP | % | 109 | | | 70-130 | Pass | |
| Endrin aldehyde | S18-De08409 | CP | % | 108 | | | 70-130 | Pass | |
| Endrin ketone | S18-De08409 | CP | % | 92 | | | 70-130 | Pass | |
| g-BHC (Lindane) | S18-De08409 | CP | % | 112 | | | 70-130 | Pass | |
| Heptachlor epoxide | S18-De08409 | CP | % | 98 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | | | | | |
| Arsenic | S18-De08409 | CP | % | 113 | | | 75-125 | Pass | |
| Cadmium | S18-De08409 | CP | % | 95 | | | 75-125 | Pass | |
| Chromium | S18-De08409 | CP | % | 108 | | | 75-125 | Pass | |
| Copper | S18-De08409 | CP | % | 110 | | | 75-125 | Pass | |
| Lead | S18-De08409 | CP | % | 111 | | | 75-125 | Pass | |
| Mercury | S18-De08409 | CP | % | 102 | | | 70-130 | Pass | |
| Nickel | S18-De08409 | CP | % | 107 | | | 75-125 | Pass | |
| Zinc | S18-De08409 | CP | % | 130 | | | 75-125 | Fail | Q08 |
| **Spike - % Recovery** | | | | | | | | | |
| **Carbamate Pesticides** | | | | Result 1 | | | | | |
| Aldicarb | S18-De08412 | CP | % | 98 | | | 70-130 | Pass | |
| Bendiocarb | S18-De08412 | CP | % | 93 | | | 70-130 | Pass | |
| Carbaryl | S18-De08412 | CP | % | 118 | | | 70-130 | Pass | |
| Carbofuran | S18-De08412 | CP | % | 93 | | | 70-130 | Pass | |
| Methomyl | S18-De08412 | CP | % | 97 | | | 70-130 | Pass | |
| Oxamyl | S18-De08412 | CP | % | 81 | | | 70-130 | Pass | |

| Test | Lab Sample ID | QA Source | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| Thiobencarb | S18-De08412 | CP | % | 103 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Synthetic Pyrethroids*** | | | | Result 1 | | | | | |
| Cyfluthrin* | S18-De08412 | CP | % | 92 | | | 70-130 | Pass | |
| Cypermethrin (total)* | S18-De08412 | CP | % | 94 | | | 70-130 | Pass | |
| Permethrin | S18-De08412 | CP | % | 98 | | | 70-130 | Pass | |
| Resmethrin* | S18-De08412 | CP | % | 99 | | | 70-130 | Pass | |
| Tetramethrin* | S18-De08412 | CP | % | 110 | | | 70-130 | Pass | |
| **Spike - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | | | | | |
| Arsenic | S18-De08419 | CP | % | 113 | | | 75-125 | Pass | |
| Cadmium | S18-De08419 | CP | % | 93 | | | 75-125 | Pass | |
| Chromium | S18-De08419 | CP | % | 107 | | | 75-125 | Pass | |
| Copper | S18-De08419 | CP | % | 115 | | | 75-125 | Pass | |
| Lead | S18-De08419 | CP | % | 104 | | | 75-125 | Pass | |
| Mercury | S18-De08419 | CP | % | 97 | | | 70-130 | Pass | |
| Nickel | S18-De08419 | CP | % | 113 | | | 75-125 | Pass | |
| Zinc | S18-De08419 | CP | % | 116 | | | 75-125 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| % Moisture | M18-De08558 | NCP | % | 13 | 13 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Organochlorine Pesticides** | | | | Result 1 | Result 2 | RPD | | | |
| Chlordanes - Total | S18-De08342 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| 4.4'-DDD | S18-De08342 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| 4.4'-DDE | S18-De08342 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| 4.4'-DDT | S18-De08342 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| a-BHC | S18-De08342 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Aldrin | S18-De08342 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| b-BHC | S18-De08342 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| d-BHC | S18-De08342 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Dieldrin | S18-De08342 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan I | S18-De08342 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan II | S18-De08342 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan sulphate | S18-De08342 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin | S18-De08342 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin aldehyde | S18-De08342 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin ketone | S18-De08342 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| g-BHC (Lindane) | S18-De08342 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Heptachlor | S18-De08342 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Heptachlor epoxide | S18-De08342 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Hexachlorobenzene | S18-De08342 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Methoxychlor | S18-De08342 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Organophosphorus Pesticides** | | | | Result 1 | Result 2 | RPD | | | |
| Azinphos-methyl | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Bolstar | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Chlorfenvinphos | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Chlorpyrifos | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Chlorpyrifos-methyl | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Coumaphos | S18-De08342 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Demeton-S | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Demeton-O | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| **Organophosphorus Pesticides** | | | | Result 1 | Result 2 | RPD | | | |
| Diazinon | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Dichlorvos | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Dimethoate | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Disulfoton | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| EPN | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Ethion | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Ethoprop | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Ethyl parathion | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Fenitrothion | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Fensulfothion | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Fenthion | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Malathion | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Merphos | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Methyl parathion | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Mevinphos | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Monocrotophos | S18-De08342 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Naled | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Omethoate | S18-De08342 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Phorate | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Pirimiphos-methyl | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Pyrazophos | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Ronnel | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Terbufos | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Tetrachlorvinphos | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Tokuthion | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Trichloronate | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Triazines** | | | | Result 1 | Result 2 | RPD | | | |
| Ametryn | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Atraton | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Atrazine | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Prometon | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Prometryn | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Propazine | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Simazine | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Simetryn | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Terbuthylazine | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Terbutryne | S18-De08342 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Organochlorine Pesticides** | | | | Result 1 | Result 2 | RPD | | | |
| Chlordanes - Total | S18-De08408 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| 4.4'-DDD | S18-De08408 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| 4.4'-DDE | S18-De08408 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| 4.4'-DDT | S18-De08408 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| a-BHC | S18-De08408 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Aldrin | S18-De08408 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| b-BHC | S18-De08408 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| d-BHC | S18-De08408 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Dieldrin | S18-De08408 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan I | S18-De08408 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan II | S18-De08408 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan sulphate | S18-De08408 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin | S18-De08408 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin aldehyde | S18-De08408 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| **Organochlorine Pesticides** | | | | Result 1 | Result 2 | RPD | | | |
| Endrin ketone | S18-De08408 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| g-BHC (Lindane) | S18-De08408 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Heptachlor | S18-De08408 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Heptachlor epoxide | S18-De08408 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Hexachlorobenzene | S18-De08408 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Methoxychlor | S18-De08408 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Organophosphorus Pesticides** | | | | Result 1 | Result 2 | RPD | | | |
| Azinphos-methyl | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Bolstar | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Chlorfenvinphos | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Chlorpyrifos | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Chlorpyrifos-methyl | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Coumaphos | S18-De08408 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Demeton-S | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Demeton-O | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Diazinon | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Dichlorvos | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Dimethoate | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Disulfoton | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| EPN | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Ethion | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Ethoprop | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Ethyl parathion | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Fenitrothion | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Fensulfothion | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Fenthion | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Malathion | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Merphos | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Methyl parathion | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Mevinphos | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Monocrotophos | S18-De08408 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Naled | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Omethoate | S18-De08408 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Phorate | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Pirimiphos-methyl | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Pyrazophos | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Ronnel | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Terbufos | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Tetrachlorvinphos | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Tokuthion | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Trichloronate | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Triazines** | | | | Result 1 | Result 2 | RPD | | | |
| Ametryn | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Atraton | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Atrazine | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Prometon | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Prometryn | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Propazine | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Simazine | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Simetryn | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Terbuthylazine | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Terbutryne | S18-De08408 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | S18-De08408 | CP | mg/kg | 43 | 36 | 18 | 30% | Pass | |
| Cadmium | S18-De08408 | CP | mg/kg | < 0.4 | < 0.4 | <1 | 30% | Pass | |
| Chromium | S18-De08408 | CP | mg/kg | 9.4 | 8.9 | 5.0 | 30% | Pass | |
| Copper | S18-De08408 | CP | mg/kg | 28 | 34 | 17 | 30% | Pass | |
| Lead | S18-De08408 | CP | mg/kg | 14 | 12 | 14 | 30% | Pass | |
| Mercury | S18-De08408 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Nickel | S18-De08408 | CP | mg/kg | 10 | 11 | 9.0 | 30% | Pass | |
| Zinc | S18-De08408 | CP | mg/kg | 52 | 60 | 14 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | S18-De08409 | CP | mg/kg | 390 | 400 | 2.0 | 30% | Pass | |
| Cadmium | S18-De08409 | CP | mg/kg | < 0.4 | < 0.4 | <1 | 30% | Pass | |
| Chromium | S18-De08409 | CP | mg/kg | 14 | 14 | 2.0 | 30% | Pass | |
| Copper | S18-De08409 | CP | mg/kg | 53 | 54 | 1.0 | 30% | Pass | |
| Lead | S18-De08409 | CP | mg/kg | 42 | 43 | 1.0 | 30% | Pass | |
| Mercury | S18-De08409 | CP | mg/kg | 0.3 | 0.3 | 6.0 | 30% | Pass | |
| Nickel | S18-De08409 | CP | mg/kg | 13 | 14 | 1.0 | 30% | Pass | |
| Zinc | S18-De08409 | CP | mg/kg | 220 | 220 | 1.0 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Organochlorine Pesticides** | | | | Result 1 | Result 2 | RPD | | | |
| Chlordanes - Total | S18-De08410 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| 4.4'-DDD | S18-De08410 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| 4.4'-DDE | S18-De08410 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| 4.4'-DDT | S18-De08410 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| a-BHC | S18-De08410 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Aldrin | S18-De08410 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| b-BHC | S18-De08410 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| d-BHC | S18-De08410 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Dieldrin | S18-De08410 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan I | S18-De08410 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan II | S18-De08410 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endosulfan sulphate | S18-De08410 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin | S18-De08410 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin aldehyde | S18-De08410 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Endrin ketone | S18-De08410 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| g-BHC (Lindane) | S18-De08410 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Heptachlor | S18-De08410 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Heptachlor epoxide | S18-De08410 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Hexachlorobenzene | S18-De08410 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| Methoxychlor | S18-De08410 | CP | mg/kg | < 0.05 | < 0.05 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Organophosphorus Pesticides** | | | | Result 1 | Result 2 | RPD | | | |
| Azinphos-methyl | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Bolstar | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Chlorfenvinphos | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Chlorpyrifos | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Chlorpyrifos-methyl | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Coumaphos | S18-De08410 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Demeton-S | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Demeton-O | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Diazinon | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Dichlorvos | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Dimethoate | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Disulfoton | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| **Organophosphorus Pesticides** | | | | Result 1 | Result 2 | RPD | | | |
| EPN | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Ethion | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Ethoprop | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Ethyl parathion | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Fenitrothion | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Fensulfothion | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Fenthion | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Malathion | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Merphos | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Methyl parathion | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Mevinphos | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Monocrotophos | S18-De08410 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Naled | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Omethoate | S18-De08410 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Phorate | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Pirimiphos-methyl | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Pyrazophos | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Ronnel | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Terbufos | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Tetrachlorvinphos | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Tokuthion | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Trichloronate | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Triazines** | | | | Result 1 | Result 2 | RPD | | | |
| Ametryn | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Atraton | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Atrazine | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Prometon | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Prometryn | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Propazine | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Simazine | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Simetryn | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Terbuthylazine | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| Terbutryne | S18-De08410 | CP | mg/kg | < 0.2 | < 0.2 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Carbamate Pesticides** | | | | Result 1 | Result 2 | RPD | | | |
| Aldicarb | S18-De08411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Bendiocarb | S18-De08411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Carbaryl | S18-De08411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Carbofuran | S18-De08411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Methomyl | S18-De08411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Oxamyl | S18-De08411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Thiobencarb | S18-De08411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Synthetic Pyrethroids*** | | | | Result 1 | Result 2 | RPD | | | |
| Allethrin* | S18-De08411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Cyfluthrin* | S18-De08411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Cypermethrin (total)* | S18-De08411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Fenvalerate* | S18-De08411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Permethrin | S18-De08411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Phenothrin* | S18-De08411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Resmethrin* | S18-De08411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |
| Tetramethrin* | S18-De08411 | CP | mg/kg | < 2 | < 2 | <1 | 30% | Pass | |

| Duplicate | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | S18-De08418 | CP | mg/kg | 1000 | 1100 | 4.0 | 30% | Pass | |
| Cadmium | S18-De08418 | CP | mg/kg | < 0.4 | < 0.4 | <1 | 30% | Pass | |
| Chromium | S18-De08418 | CP | mg/kg | 16 | 16 | <1 | 30% | Pass | |
| Copper | S18-De08418 | CP | mg/kg | 49 | 47 | 5.0 | 30% | Pass | |
| Lead | S18-De08418 | CP | mg/kg | 22 | 23 | 2.0 | 30% | Pass | |
| Mercury | S18-De08418 | CP | mg/kg | 0.3 | 0.3 | 14 | 30% | Pass | |
| Nickel | S18-De08418 | CP | mg/kg | 13 | 13 | 1.0 | 30% | Pass | |
| Zinc | S18-De08418 | CP | mg/kg | 190 | 190 | 3.0 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | S18-De08419 | CP | mg/kg | 120 | 120 | 3.0 | 30% | Pass | |
| Cadmium | S18-De08419 | CP | mg/kg | < 0.4 | < 0.4 | <1 | 30% | Pass | |
| Chromium | S18-De08419 | CP | mg/kg | 9.4 | 9.9 | 6.0 | 30% | Pass | |
| Copper | S18-De08419 | CP | mg/kg | 42 | 45 | 6.0 | 30% | Pass | |
| Lead | S18-De08419 | CP | mg/kg | 10 | 11 | 5.0 | 30% | Pass | |
| Mercury | S18-De08419 | CP | mg/kg | < 0.1 | < 0.1 | <1 | 30% | Pass | |
| Nickel | S18-De08419 | CP | mg/kg | 15 | 16 | 6.0 | 30% | Pass | |
| Zinc | S18-De08419 | CP | mg/kg | 77 | 81 | 5.0 | 30% | Pass | |

## Comments

Eurofins | mgt accreditation number 1261, corporate site 1254 and 14271 is currently in progress of a controlled transition to a new custom built location at 6 Monterey Road, Dandenong South, Victoria 3175. All results on this report denoted as being performed by Eurofins | mgt 2-5 Kingston Town Close, Oakleigh Victoria 3166 corporate site 1254, will have been performed on either Oakleigh or new Dandenong South site.

## Sample Integrity

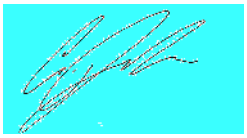
| | |
|---|---|
| Custody Seals Intact (if used) | N/A |
| Attempt to Chill was evident | Yes |
| Sample correctly preserved | Yes |
| Appropriate sample containers have been used | Yes |
| Sample containers for volatile analysis received with minimal headspace | Yes |
| Samples received within HoldingTime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

## Qualifier Codes/Comments

| Code | Description |
|---|---|
| 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

| | |
|---|---|
| Andrew Black | Analytical Services Manager |
| Chris Bennett | Senior Analyst-Metal (VIC) |
| Joseph Edouard | Senior Analyst-Organic (VIC) |



**Glenn Jackson**

**General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

**SLR Consulting**
**2 Lincoln St**
**Lane Cove West**
**NSW 2066**

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

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

**Attention:** **Junaidi Ibrahim**

**Report** **631838-W**
Project name PROTEN TAMWORTH SCA
Project ID 610.18456.00100
Received Date Dec 07, 2018

| **Client Sample ID** | | | **R01** | **R02** |
|---|---|---|---|---|
| **Sample Matrix** | | | **Water** | **Water** |
| **Eurofins \| mgt Sample No.** | | | **S18-De08426** | **S18-De08427** |
| **Date Sampled** | | | **Dec 06, 2018** | **Dec 06, 2018** |
| Test/Reference | LOR | Unit | | |
| **Organochlorine Pesticides** | | | | |
| Chlordanes - Total | 0.001 | mg/L | - | < 0.001 |
| 4.4'-DDD | 0.0001 | mg/L | - | < 0.0001 |
| 4.4'-DDE | 0.0001 | mg/L | - | < 0.0001 |
| 4.4'-DDT | 0.0001 | mg/L | - | < 0.0001 |
| a-BHC | 0.0001 | mg/L | - | < 0.0001 |
| Aldrin | 0.0001 | mg/L | - | < 0.0001 |
| b-BHC | 0.0001 | mg/L | - | < 0.0001 |
| d-BHC | 0.0001 | mg/L | - | < 0.0001 |
| Dieldrin | 0.0001 | mg/L | - | < 0.0001 |
| Endosulfan I | 0.0001 | mg/L | - | < 0.0001 |
| Endosulfan II | 0.0001 | mg/L | - | < 0.0001 |
| Endosulfan sulphate | 0.0001 | mg/L | - | < 0.0001 |
| Endrin | 0.0001 | mg/L | - | < 0.0001 |
| Endrin aldehyde | 0.0001 | mg/L | - | < 0.0001 |
| Endrin ketone | 0.0001 | mg/L | - | < 0.0001 |
| g-BHC (Lindane) | 0.0001 | mg/L | - | < 0.0001 |
| Heptachlor | 0.0001 | mg/L | - | < 0.0001 |
| Heptachlor epoxide | 0.0001 | mg/L | - | < 0.0001 |
| Hexachlorobenzene | 0.0001 | mg/L | - | < 0.0001 |
| Methoxychlor | 0.0001 | mg/L | - | < 0.0001 |
| Toxaphene | 0.01 | mg/L | - | < 0.01 |
| Aldrin and Dieldrin (Total)* | 0.0001 | mg/L | - | < 0.0001 |
| DDT + DDE + DDD (Total)* | 0.0001 | mg/L | - | < 0.0001 |
| Vic EPA IWRG 621 OCP (Total)* | 0.001 | mg/L | - | < 0.001 |
| Vic EPA IWRG 621 Other OCP (Total)* | 0.001 | mg/L | - | < 0.001 |
| Dibutylchlorendate (surr.) | 1 | % | - | 53 |
| Tetrachloro-m-xylene (surr.) | 1 | % | - | 91 |
| **Organophosphorus Pesticides** | | | | |
| Azinphos-methyl | 0.002 | mg/L | - | < 0.002 |
| Bolstar | 0.002 | mg/L | - | < 0.002 |
| Chlorfenvinphos | 0.002 | mg/L | - | < 0.002 |
| Chlorpyrifos | 0.02 | mg/L | - | < 0.02 |
| Chlorpyrifos-methyl | 0.002 | mg/L | - | < 0.002 |
| Coumaphos | 0.02 | mg/L | - | < 0.02 |
| Demeton-S | 0.02 | mg/L | - | < 0.02 |

| Client Sample ID | | | R01 | R02 |
|---|---|---|---|---|
| Sample Matrix | | | Water | Water |
| Eurofins \| mgt Sample No. | | | S18-De08426 | S18-De08427 |
| Date Sampled | | | Dec 06, 2018 | Dec 06, 2018 |
| Test/Reference | LOR | Unit | | |
| **Organophosphorus Pesticides** | | | | |
| Demeton-O | 0.002 | mg/L | - | < 0.002 |
| Diazinon | 0.002 | mg/L | - | < 0.002 |
| Dichlorvos | 0.002 | mg/L | - | < 0.002 |
| Dimethoate | 0.002 | mg/L | - | < 0.002 |
| Disulfoton | 0.002 | mg/L | - | < 0.002 |
| EPN | 0.002 | mg/L | - | < 0.002 |
| Ethion | 0.002 | mg/L | - | < 0.002 |
| Ethoprop | 0.002 | mg/L | - | < 0.002 |
| Ethyl parathion | 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 |
| Malathion | 0.002 | mg/L | - | < 0.002 |
| Merphos | 0.002 | mg/L | - | < 0.002 |
| Methyl parathion | 0.002 | mg/L | - | < 0.002 |
| Mevinphos | 0.002 | mg/L | - | < 0.002 |
| Monocrotophos | 0.002 | mg/L | - | < 0.002 |
| Naled | 0.002 | mg/L | - | < 0.002 |
| Omethoate | 0.002 | mg/L | - | < 0.002 |
| Phorate | 0.002 | mg/L | - | < 0.002 |
| Pirimiphos-methyl | 0.02 | mg/L | - | < 0.02 |
| Pyrazophos | 0.002 | mg/L | - | < 0.002 |
| Ronnel | 0.002 | mg/L | - | < 0.002 |
| Terbufos | 0.002 | mg/L | - | < 0.002 |
| Tetrachlorvinphos | 0.002 | mg/L | - | < 0.002 |
| Tokuthion | 0.002 | mg/L | - | < 0.002 |
| Trichloronate | 0.002 | mg/L | - | < 0.002 |
| Triphenylphosphate (surr.) | 1 | % | - | 58 |
| **Triazines** | | | | |
| Ametryn | 0.002 | mg/L | - | < 0.002 |
| Atraton | 0.002 | mg/L | - | < 0.002 |
| Atrazine | 0.002 | mg/L | - | < 0.002 |
| Prometon | 0.002 | mg/L | - | < 0.002 |
| Prometryn | 0.002 | mg/L | - | < 0.002 |
| Propazine | 0.002 | mg/L | - | < 0.002 |
| Simazine | 0.002 | mg/L | - | < 0.002 |
| Simetryn | 0.002 | mg/L | - | < 0.002 |
| Terbuthylazine | 0.002 | mg/L | - | < 0.002 |
| Terbutryne | 0.002 | mg/L | - | < 0.002 |
| **Carbamate Pesticides** | | | | |
| Aldicarb | 0.01 | mg/L | - | < 0.01 |
| Bendiocarb | 0.01 | mg/L | - | < 0.01 |
| Carbaryl | 0.01 | mg/L | - | < 0.01 |
| Carbofuran | 0.01 | mg/L | - | < 0.01 |
| Methomyl | 0.01 | mg/L | - | < 0.01 |
| Oxamyl | 0.01 | mg/L | - | < 0.01 |
| Thiobencarb | 0.01 | mg/L | - | < 0.01 |

| Client Sample ID | | | R01 | R02 |
|---|---|---|---|---|
| **Sample Matrix** | | | **Water** | **Water** |
| **Eurofins \| mgt Sample No.** | | | **S18-De08426** | **S18-De08427** |
| **Date Sampled** | | | **Dec 06, 2018** | **Dec 06, 2018** |
| Test/Reference | LOR | Unit | | |
| **Synthetic Pyrethroids*** | | | | |
| Allethrin* | 0.2 | mg/L | - | < 0.2 |
| Cyfluthrin* | 0.2 | mg/L | - | < 0.2 |
| Cypermethrin (total)* | 0.2 | mg/L | - | < 0.2 |
| Fenvalerate* | 0.2 | mg/L | - | < 0.2 |
| Permethrin | 0.2 | mg/L | - | < 0.2 |
| Phenothrin* | 0.2 | mg/L | - | < 0.2 |
| Resmethrin* | 0.2 | mg/L | - | < 0.2 |
| Tetramethrin* | 0.2 | mg/L | - | < 0.2 |
| **Heavy Metals** | | | | |
| Arsenic | 0.001 | mg/L | < 0.001 | - |
| Cadmium | 0.0002 | mg/L | < 0.0002 | - |
| Chromium | 0.001 | mg/L | < 0.001 | - |
| Copper | 0.001 | mg/L | < 0.001 | - |
| Lead | 0.001 | mg/L | < 0.001 | - |
| Mercury | 0.0001 | mg/L | < 0.0001 | - |
| Nickel | 0.001 | mg/L | < 0.001 | - |
| Zinc | 0.005 | mg/L | < 0.005 | - |

## Sample History

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

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

| Description | Testing Site | Extracted | Holding Time |
|---|---|---|---|
| Eurofins \| mgt Suite B14 | | | |
| Organochlorine Pesticides | Melbourne | Dec 12, 2018 | 7 Day |
| - Method: LTM-ORG-2220 OCP & PCB in Soil and Water | | | |
| Organophosphorus Pesticides | Melbourne | Dec 12, 2018 | 7 Day |
| - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS | | | |
| Triazines | Melbourne | Dec 12, 2018 | 7 Day |
| - Method: LTM-ORG-2080 | | | |
| Carbamate Pesticides | Melbourne | Dec 18, 2018 | 7 Day |
| - Method: LTM-ORG-2290 Carbamates in waters and soils by HPLC | | | |
| Synthetic Pyrethroids* | Melbourne | Dec 08, 2018 | 7 Day |
| - Method: LTM-ORG-2170 Synthetic Pyrethroids by HPLC-UV | | | |
| Metals M8 | Melbourne | Dec 08, 2018 | 28 Days |
| - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS | | | |

eurofins | mgt

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

**Melbourne**
2-5 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

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

**Company Name:** SLR Consulting (Sydney)
**Address:** 2 Lincoln St
Lane Cove West
NSW 2066

**Project Name:** PROTEN TAMWORTH SCA
**Project ID:** 610.18456.00100

**Order No.:**
**Report #:** 631838
**Phone:** 02 9428 8100
**Fax:**

**Received:** Dec 7, 2018 2:21 PM
**Due:** Dec 14, 2018
**Priority:** 5 Day
**Contact Name:** Junaidi Ibrahim

**Eurofins | mgt Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | HOLD | Triazines | Carbamate Pesticides | Synthetic Pyrethroids* | Metals M8 | Eurofins \| mgt Suite B14 | Moisture Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | X | X | X | X | X | X | X |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | | | | | | |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | |
| **External Laboratory** | | | | | | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | | | | | | |
| 1 | TP01_0.1 | Dec 06, 2018 | | Soil | S18-De08338 | | X | X | X | X | X | X |
| 2 | TP01_0.7 | Dec 06, 2018 | | Soil | S18-De08339 | | X | X | X | X | X | X |
| 3 | TP01_1.2 | Dec 06, 2018 | | Soil | S18-De08340 | | X | X | X | X | X | X |
| 4 | TP16_0.2 | Dec 06, 2018 | | Soil | S18-De08341 | | X | X | X | X | X | X |
| 5 | TP16_0.6 | Dec 06, 2018 | | Soil | S18-De08342 | | X | X | X | X | X | X |
| 6 | TP16_1.1 | Dec 06, 2018 | | Soil | S18-De08343 | | X | X | X | X | X | X |
| 7 | TP02_0.2 | Dec 06, 2018 | | Soil | S18-De08406 | | X | X | X | X | X | X |
| 8 | TP02_0.7 | Dec 06, 2018 | | Soil | S18-De08407 | | X | X | X | X | X | X |
| 9 | TP02_1.2 | Dec 06, 2018 | | Soil | S18-De08408 | | X | X | X | X | X | X |

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

**Melbourne**
2-5 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

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

**Company Name:** SLR Consulting (Sydney)
**Address:** 2 Lincoln St
Lane Cove West
NSW 2066

**Project Name:** PROTEN TAMWORTH SCA
**Project ID:** 610.18456.00100

**Order No.:**
**Report #:** 631838
**Phone:** 02 9428 8100
**Fax:**

**Received:** Dec 7, 2018 2:21 PM
**Due:** Dec 14, 2018
**Priority:** 5 Day
**Contact Name:** Junaidi Ibrahim

**Eurofins | mgt Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | HOLD | Triazines | Carbamate Pesticides | Synthetic Pyrethroids* | Metals M8 | Eurofins \| mgt Suite B14 | Moisture Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | X | X | X | X | X | X | X |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | | | | | | |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | |
| 10 | TP06_0.2 | Dec 06, 2018 | | Soil | S18-De08409 | | X | X | X | X | X | X |
| 11 | TP06_0.6 | Dec 06, 2018 | | Soil | S18-De08410 | | X | X | X | X | X | X |
| 12 | TP06_1.1 | Dec 06, 2018 | | Soil | S18-De08411 | | X | X | X | X | X | X |
| 13 | TP07_0.2 | Dec 06, 2018 | | Soil | S18-De08412 | | X | X | X | X | X | X |
| 14 | TP07_0.6 | Dec 06, 2018 | | Soil | S18-De08413 | | X | X | X | X | X | X |
| 15 | TP07_1.1 | Dec 06, 2018 | | Soil | S18-De08414 | | X | X | X | X | X | X |
| 16 | TP11_0.2 | Dec 06, 2018 | | Soil | S18-De08415 | | X | X | X | X | X | X |
| 17 | TP11_0.6 | Dec 06, 2018 | | Soil | S18-De08416 | | X | X | X | X | X | X |
| 18 | TP11_1.1 | Dec 06, 2018 | | Soil | S18-De08417 | | X | X | X | X | X | X |
| 19 | TP12_0.2 | Dec 06, 2018 | | Soil | S18-De08418 | | X | X | X | X | X | X |
| 20 | TP12_0.6 | Dec 06, 2018 | | Soil | S18-De08419 | | X | X | X | X | X | X |
| 21 | TP12_1.1 | Dec 06, 2018 | | Soil | S18-De08420 | | X | X | X | X | X | X |

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

**Melbourne**
2-5 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

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

**Company Name:** SLR Consulting (Sydney)
**Address:** 2 Lincoln St
Lane Cove West
NSW 2066

**Project Name:** PROTEN TAMWORTH SCA
**Project ID:** 610.18456.00100

**Order No.:**
**Report #:** 631838
**Phone:** 02 9428 8100
**Fax:**

**Received:** Dec 7, 2018 2:21 PM
**Due:** Dec 14, 2018
**Priority:** 5 Day
**Contact Name:** Junaidi Ibrahim

**Eurofins | mgt Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | HOLD | Triazines | Carbamate Pesticides | Synthetic Pyrethroids* | Metals M8 | Eurofins \| mgt Suite B14 | Moisture Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | X | X | X | X | X | X | X |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | | | | | | |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | |
| 22 | QC1 | Dec 06, 2018 | | Soil | S18-De08421 | | X | X | X | X | X | X |
| 23 | QC3 | Dec 06, 2018 | | Soil | S18-De08422 | | X | X | X | X | X | X |
| 24 | QC4 | Dec 06, 2018 | | Soil | S18-De08423 | | X | X | X | X | X | X |
| 25 | QC5 | Dec 06, 2018 | | Soil | S18-De08424 | | X | X | X | X | X | X |
| 26 | QC7 | Dec 06, 2018 | | Soil | S18-De08425 | | X | X | X | X | X | X |
| 27 | R01 | Dec 06, 2018 | | Water | S18-De08426 | | | | | X | | |
| 28 | R02 | Dec 06, 2018 | | Water | S18-De08427 | | X | X | X | | X | |
| 29 | TP17_0.1 | Dec 06, 2018 | | Soil | S18-De08428 | X | | | | | | |
| 30 | TP17_0.8 | Dec 06, 2018 | | Soil | S18-De08429 | X | | | | | | |
| 31 | TP17_1.2 | Dec 06, 2018 | | Soil | S18-De08430 | X | | | | | | |
| 32 | TP03_0.2 | Dec 06, 2018 | | Soil | S18-De08431 | X | | | | | | |
| 33 | TP03_0.6 | Dec 06, 2018 | | Soil | S18-De08432 | X | | | | | | |

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

**Melbourne**
2-5 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

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

**Company Name:** SLR Consulting (Sydney)
**Address:** 2 Lincoln St
Lane Cove West
NSW 2066

**Project Name:** PROTEN TAMWORTH SCA
**Project ID:** 610.18456.00100

**Order No.:**
**Report #:** 631838
**Phone:** 02 9428 8100
**Fax:**

**Received:** Dec 7, 2018 2:21 PM
**Due:** Dec 14, 2018
**Priority:** 5 Day
**Contact Name:** Junaidi Ibrahim

**Eurofins | mgt Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | HOLD | Triazines | Carbamate Pesticides | Synthetic Pyrethroids* | Metals M8 | Eurofins \| mgt Suite B14 | Moisture Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | X | X | X | X | X | X | X |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | | | | | | |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | |
| 34 | TP03_1.1 | Dec 06, 2018 | | Soil | S18-De08433 | X | | | | | | |
| 35 | TP04_0.2 | Dec 06, 2018 | | Soil | S18-De08434 | X | | | | | | |
| 36 | TP04_0.7 | Dec 06, 2018 | | Soil | S18-De08435 | X | | | | | | |
| 37 | TP04_1.1 | Dec 06, 2018 | | Soil | S18-De08436 | X | | | | | | |
| 38 | TP05_0.2 | Dec 06, 2018 | | Soil | S18-De08437 | X | | | | | | |
| 39 | TP05_0.6 | Dec 06, 2018 | | Soil | S18-De08438 | X | | | | | | |
| 40 | TP05_1.1 | Dec 06, 2018 | | Soil | S18-De08439 | X | | | | | | |
| 41 | TP08_0.1 | Dec 06, 2018 | | Soil | S18-De08440 | X | | | | | | |
| 42 | TP08_0.5 | Dec 06, 2018 | | Soil | S18-De08441 | X | | | | | | |
| 43 | TP08_1.0 | Dec 06, 2018 | | Soil | S18-De08442 | X | | | | | | |
| 44 | TP09_0.1 | Dec 06, 2018 | | Soil | S18-De08443 | X | | | | | | |
| 45 | TP09_0.5 | Dec 06, 2018 | | Soil | S18-De08444 | X | | | | | | |

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

**Melbourne**
2-5 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

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

**Company Name:** SLR Consulting (Sydney)
**Address:** 2 Lincoln St
Lane Cove West
NSW 2066

**Project Name:** PROTEN TAMWORTH SCA
**Project ID:** 610.18456.00100

**Order No.:**
**Report #:** 631838
**Phone:** 02 9428 8100
**Fax:**

**Received:** Dec 7, 2018 2:21 PM
**Due:** Dec 14, 2018
**Priority:** 5 Day
**Contact Name:** Junaidi Ibrahim

**Eurofins | mgt Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | HOLD | Triazines | Carbamate Pesticides | Synthetic Pyrethroids* | Metals M8 | Eurofins \| mgt Suite B14 | Moisture Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | X | X | X | X | X | X | X |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | | | | | | |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | |
| 46 | TP09_0.9 | Dec 06, 2018 | | Soil | S18-De08445 | X | | | | | | |
| 47 | TP10_0.1 | Dec 06, 2018 | | Soil | S18-De08446 | X | | | | | | |
| 48 | TP10_0.4 | Dec 06, 2018 | | Soil | S18-De08447 | X | | | | | | |
| 49 | TP10_0.8 | Dec 06, 2018 | | Soil | S18-De08448 | X | | | | | | |
| 50 | TP13_0.2 | Dec 06, 2018 | | Soil | S18-De08449 | X | | | | | | |
| 51 | TP13_0.6 | Dec 06, 2018 | | Soil | S18-De08450 | X | | | | | | |
| 52 | TP13_1.0 | Dec 06, 2018 | | Soil | S18-De08451 | X | | | | | | |
| 53 | TP14_0.2 | Dec 06, 2018 | | Soil | S18-De08452 | X | | | | | | |
| 54 | TP14_0.6 | Dec 06, 2018 | | Soil | S18-De08453 | X | | | | | | |
| 55 | TP14_1.1 | Dec 06, 2018 | | Soil | S18-De08454 | X | | | | | | |
| 56 | TP15_0.2 | Dec 06, 2018 | | Soil | S18-De08455 | X | | | | | | |
| 57 | TP15_0.7 | Dec 06, 2018 | | Soil | S18-De08456 | X | | | | | | |

eurofins | mgt

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

**Melbourne**
2-5 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

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

**Company Name:** SLR Consulting (Sydney)
**Address:** 2 Lincoln St
Lane Cove West
NSW 2066

**Project Name:** PROTEN TAMWORTH SCA
**Project ID:** 610.18456.00100

**Order No.:**
**Report #:** 631838
**Phone:** 02 9428 8100
**Fax:**

**Received:** Dec 7, 2018 2:21 PM
**Due:** Dec 14, 2018
**Priority:** 5 Day
**Contact Name:** Junaidi Ibrahim

**Eurofins | mgt Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | HOLD | Triazines | Carbamate Pesticides | Synthetic Pyrethroids* | Metals M8 | Eurofins \| mgt Suite B14 | Moisture Set |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | X | X | X | X | X | X | X |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | | | | | | |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | | | | | | |
| 58 | TP15_1.2 | Dec 06, 2018 | | Soil | S18-De08457 | X | | | | | | |
| 59 | TS | Dec 06, 2018 | | Soil | S18-De08522 | X | | | | | | |
| 60 | TB | Dec 06, 2018 | | Soil | S18-De08523 | X | | | | | | |
| 61 | LAB SPIKE | Dec 06, 2018 | | Soil | S18-De08524 | X | | | | | | |
| **Test Counts** | | | | | | 33 | 27 | 27 | 27 | 27 | 27 | 26 |

## 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. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

### Holding Times

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

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

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

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

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

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

### Units

**mg/kg:** milligrams per kilogram

**mg/L:** milligrams per litre

**ug/L:** micrograms per litre

**ppm:** Parts per million

**ppb:** Parts per billion

**%:** Percentage

**org/100mL:** Organisms per 100 millilitres

**NTU:** Nephelometric Turbidity Units

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

### Terms

| | |
|---|---|
| **Dry** | Where a moisture has been determined on a solid sample the result is expressed on a dry basis. |
| **LOR** | Limit of Reporting. |
| **SPIKE** | Addition of the analyte to the sample and reported as percentage recovery. |
| **RPD** | Relative Percent Difference between two Duplicate pieces of analysis. |
| **LCS** | Laboratory Control Sample - reported as percent recovery. |
| **CRM** | Certified Reference Material - reported as percent recovery. |
| **Method Blank** | In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water. |
| **Surr - Surrogate** | The addition of a like compound to the analyte target and reported as percentage recovery. |
| **Duplicate** | A second piece of analysis from the same sample and reported in the same units as the result to show comparison. |
| **USEPA** | United States Environmental Protection Agency |
| **APHA** | American Public Health Association |
| **TCLP** | Toxicity Characteristic Leaching Procedure |
| **COC** | Chain of Custody |
| **SRA** | Sample Receipt Advice |
| **QSM** | Quality Systems Manual ver 5.1 US Department of Defense |
| **CP** | Client Parent - QC was performed on samples pertaining to this report |
| **NCP** | Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within. |
| **TEQ** | Toxic Equivalency Quotient |

### QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

### QC Data General Comments

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

**Quality Control Results**

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| **Method Blank** | | | | | | | |
| **Organochlorine Pesticides** | | | | | | | |
| Chlordanes - Total | mg/L | < 0.001 | | | 0.001 | Pass | |
| 4.4'-DDD | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| 4.4'-DDE | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| 4.4'-DDT | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| a-BHC | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Aldrin | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| b-BHC | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| d-BHC | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Dieldrin | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Endosulfan I | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Endosulfan II | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Endosulfan sulphate | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Endrin | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Endrin aldehyde | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Endrin ketone | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| g-BHC (Lindane) | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Heptachlor | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Heptachlor epoxide | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Hexachlorobenzene | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Methoxychlor | mg/L | < 0.0001 | | | 0.0001 | Pass | |
| Toxaphene | mg/L | < 0.01 | | | 0.01 | Pass | |
| **Method Blank** | | | | | | | |
| **Organophosphorus Pesticides** | | | | | | | |
| Azinphos-methyl | mg/L | < 0.002 | | | 0.002 | Pass | |
| Bolstar | mg/L | < 0.002 | | | 0.002 | Pass | |
| Chlorfenvinphos | mg/L | < 0.002 | | | 0.002 | Pass | |
| Chlorpyrifos | mg/L | < 0.02 | | | 0.02 | Pass | |
| Chlorpyrifos-methyl | mg/L | < 0.002 | | | 0.002 | Pass | |
| Coumaphos | mg/L | < 0.02 | | | 0.02 | Pass | |
| Demeton-S | mg/L | < 0.02 | | | 0.02 | 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 | |
| Dimethoate | mg/L | < 0.002 | | | 0.002 | Pass | |
| Disulfoton | mg/L | < 0.002 | | | 0.002 | Pass | |
| EPN | mg/L | < 0.002 | | | 0.002 | Pass | |
| Ethion | mg/L | < 0.002 | | | 0.002 | Pass | |
| Ethoprop | mg/L | < 0.002 | | | 0.002 | Pass | |
| Ethyl parathion | 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 | |
| Malathion | mg/L | < 0.002 | | | 0.002 | Pass | |
| Merphos | mg/L | < 0.002 | | | 0.002 | Pass | |
| Methyl parathion | mg/L | < 0.002 | | | 0.002 | Pass | |
| Mevinphos | mg/L | < 0.002 | | | 0.002 | Pass | |
| Monocrotophos | mg/L | < 0.002 | | | 0.002 | Pass | |
| Naled | mg/L | < 0.002 | | | 0.002 | Pass | |
| Omethoate | mg/L | < 0.002 | | | 0.002 | Pass | |
| Phorate | mg/L | < 0.002 | | | 0.002 | Pass | |

| Test | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|
| Pirimiphos-methyl | mg/L | < 0.02 | | | 0.02 | Pass | |
| Pyrazophos | mg/L | < 0.002 | | | 0.002 | Pass | |
| Ronnel | mg/L | < 0.002 | | | 0.002 | Pass | |
| Terbufos | mg/L | < 0.002 | | | 0.002 | Pass | |
| Tetrachlorvinphos | 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** | | | | | | | |
| **Triazines** | | | | | | | |
| Ametryn | mg/L | < 0.002 | | | 0.002 | Pass | |
| Atraton | mg/L | < 0.002 | | | 0.002 | Pass | |
| Atrazine | mg/L | < 0.002 | | | 0.002 | Pass | |
| Prometon | mg/L | < 0.002 | | | 0.002 | Pass | |
| Prometryn | mg/L | < 0.002 | | | 0.002 | Pass | |
| Propazine | mg/L | < 0.002 | | | 0.002 | Pass | |
| Simazine | mg/L | < 0.002 | | | 0.002 | Pass | |
| Simetryn | mg/L | < 0.002 | | | 0.002 | Pass | |
| Terbuthylazine | mg/L | < 0.002 | | | 0.002 | Pass | |
| Terbutryne | 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 | < 0.005 | | | 0.005 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Organochlorine Pesticides** | | | | | | | |
| Chlordanes - Total | % | 90 | | | 70-130 | Pass | |
| 4.4'-DDD | % | 91 | | | 70-130 | Pass | |
| 4.4'-DDE | % | 113 | | | 70-130 | Pass | |
| 4.4'-DDT | % | 93 | | | 70-130 | Pass | |
| a-BHC | % | 101 | | | 70-130 | Pass | |
| Aldrin | % | 104 | | | 70-130 | Pass | |
| b-BHC | % | 104 | | | 70-130 | Pass | |
| d-BHC | % | 108 | | | 70-130 | Pass | |
| Dieldrin | % | 95 | | | 70-130 | Pass | |
| Endosulfan I | % | 98 | | | 70-130 | Pass | |
| Endosulfan II | % | 89 | | | 70-130 | Pass | |
| Endosulfan sulphate | % | 71 | | | 70-130 | Pass | |
| Endrin | % | 83 | | | 70-130 | Pass | |
| Endrin aldehyde | % | 77 | | | 70-130 | Pass | |
| Endrin ketone | % | 72 | | | 70-130 | Pass | |
| g-BHC (Lindane) | % | 106 | | | 70-130 | Pass | |
| Heptachlor | % | 84 | | | 70-130 | Pass | |
| Heptachlor epoxide | % | 89 | | | 70-130 | Pass | |
| Hexachlorobenzene | % | 112 | | | 70-130 | Pass | |
| Methoxychlor | % | 77 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | |
| **Organophosphorus Pesticides** | | | | | | | |
| Diazinon | % | 84 | | | 70-130 | Pass | |

| Test | | | Units | Result 1 | | | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| Dimethoate | | | % | 73 | | | 70-130 | Pass | |
| Ethion | | | % | 109 | | | 70-130 | Pass | |
| Fenitrothion | | | % | 94 | | | 70-130 | Pass | |
| Methyl parathion | | | % | 94 | | | 70-130 | Pass | |
| Mevinphos | | | % | 83 | | | 70-130 | Pass | |
| **LCS - % Recovery** | | | | | | | | | |
| **Triazines** | | | | | | | | | |
| Prometryn | | | % | 113 | | | 75-125 | Pass | |
| **LCS - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | | | | | | |
| Arsenic | | | % | 87 | | | 80-120 | Pass | |
| Cadmium | | | % | 83 | | | 80-120 | Pass | |
| Chromium | | | % | 85 | | | 80-120 | Pass | |
| Copper | | | % | 87 | | | 80-120 | Pass | |
| Lead | | | % | 86 | | | 80-120 | Pass | |
| Mercury | | | % | 102 | | | 75-125 | Pass | |
| Nickel | | | % | 87 | | | 80-120 | Pass | |
| Zinc | | | % | 88 | | | 80-120 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Spike - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | | | | | |
| Arsenic | M18-De10416 | NCP | % | 89 | | | 75-125 | Pass | |
| Cadmium | M18-De10416 | NCP | % | 94 | | | 75-125 | Pass | |
| Chromium | M18-De10416 | NCP | % | 93 | | | 75-125 | Pass | |
| Copper | M18-De10416 | NCP | % | 92 | | | 75-125 | Pass | |
| Lead | M18-De10416 | NCP | % | 94 | | | 75-125 | Pass | |
| Mercury | M18-De10416 | NCP | % | 92 | | | 70-130 | Pass | |
| Nickel | M18-De10416 | NCP | % | 92 | | | 75-125 | Pass | |
| Zinc | M18-De10416 | NCP | % | 94 | | | 75-125 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | M18-De10416 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Cadmium | M18-De10416 | NCP | mg/L | < 0.0002 | < 0.0002 | <1 | 30% | Pass | |
| Chromium | M18-De10416 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Copper | M18-De10416 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Lead | M18-De10416 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Mercury | M18-De10416 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Nickel | M18-De10416 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| Zinc | M18-De10416 | NCP | mg/L | 0.028 | 0.030 | 5.0 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Organochlorine Pesticides** | | | | Result 1 | Result 2 | RPD | | | |
| Chlordanes - Total | S18-De04616 | NCP | mg/L | < 0.001 | < 0.001 | <1 | 30% | Pass | |
| 4.4'-DDD | S18-De04616 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| 4.4'-DDE | S18-De04616 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| 4.4'-DDT | S18-De04616 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| a-BHC | S18-De04616 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Aldrin | S18-De04616 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| b-BHC | S18-De04616 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| d-BHC | S18-De04616 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Dieldrin | S18-De04616 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Endosulfan I | S18-De04616 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Endosulfan II | S18-De04616 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Duplicate** | | | | | | | | | |
| **Organochlorine Pesticides** | | | | Result 1 | Result 2 | RPD | | | |
| Endosulfan sulphate | S18-De04616 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Endrin | S18-De04616 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Endrin aldehyde | S18-De04616 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Endrin ketone | S18-De04616 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| g-BHC (Lindane) | S18-De04616 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Heptachlor | S18-De04616 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Heptachlor epoxide | S18-De04616 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Hexachlorobenzene | S18-De04616 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| Methoxychlor | S18-De04616 | NCP | mg/L | < 0.0001 | < 0.0001 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Organophosphorus Pesticides** | | | | Result 1 | Result 2 | RPD | | | |
| Azinphos-methyl | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Bolstar | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Chlorfenvinphos | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Chlorpyrifos | B18-De12402 | NCP | mg/L | < 0.02 | < 0.02 | <1 | 30% | Pass | |
| Chlorpyrifos-methyl | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Coumaphos | B18-De12402 | NCP | mg/L | < 0.02 | < 0.02 | <1 | 30% | Pass | |
| Demeton-S | B18-De12402 | NCP | mg/L | < 0.02 | < 0.02 | <1 | 30% | Pass | |
| Demeton-O | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Diazinon | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Dichlorvos | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Dimethoate | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Disulfoton | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| EPN | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Ethion | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Ethoprop | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Ethyl parathion | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Fenitrothion | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Fensulfothion | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Fenthion | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Malathion | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Merphos | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Methyl parathion | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Mevinphos | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Monocrotophos | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Naled | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Omethoate | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Phorate | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Pirimiphos-methyl | B18-De12402 | NCP | mg/L | < 0.02 | < 0.02 | <1 | 30% | Pass | |
| Pyrazophos | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Ronnel | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Terbufos | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Tetrachlorvinphos | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Tokuthion | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Trichloronate | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Triazines** | | | | Result 1 | Result 2 | RPD | | | |
| Ametryn | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Atraton | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Atrazine | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Prometon | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Prometryn | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Propazine | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Simazine | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |

| Duplicate | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Triazines** | | | | Result 1 | Result 2 | RPD | | | |
| Simetryn | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Terbuthylazine | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |
| Terbutryne | B18-De12402 | NCP | mg/L | < 0.002 | < 0.002 | <1 | 30% | Pass | |

## Comments

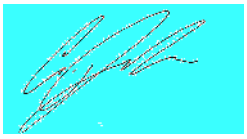
Eurofins | mgt accreditation number 1261, corporate site 1254 and 14271 is currently in progress of a controlled transition to a new custom built location at 6 Monterey Road, Dandenong South, Victoria 3175. All results on this report denoted as being performed by Eurofins | mgt 2-5 Kingston Town Close, Oakleigh Victoria 3166 corporate site 1254, will have been performed on either Oakleigh or new Dandenong South site.

## Sample Integrity

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

## Authorised By

| | |
|---|---|
| Andrew Black | Analytical Services Manager |
| Chris Bennett | Senior Analyst-Metal (VIC) |
| Joseph Edouard | Senior Analyst-Organic (VIC) |



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

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

**SLR Consulting**
**2 Lincoln St**
**Lane Cove West**
**NSW 2066**

**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:** **Ben Dewhurst**

**Report** **633738-S**
Project name PROTEN TAMWORTH SCA
Project ID 610.18456.00100
Received Date Dec 19, 2018

| **Client Sample ID** | | | **TP03_0.2** | **TP03_0.6** | **TP03_1.1** | **TP08_0.1** |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins \| mgt Sample No.** | | | **M18-De25159** | **M18-De25160** | **M18-De25161** | **M18-De25162** |
| **Date Sampled** | | | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** |
| Test/Reference | LOR | Unit | | | | |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 290 | 17 | 17 | 130 |
| | | | | | | |
| % Moisture | 1 | % | 14 | 12 | 8.5 | 16 |

| **Client Sample ID** | | | **TP08_0.5** | **TP08_1.0** | **TP13_0.2** | **TP13_0.6** |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins \| mgt Sample No.** | | | **M18-De25163** | **M18-De25164** | **M18-De25165** | **M18-De25166** |
| **Date Sampled** | | | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** |
| Test/Reference | LOR | Unit | | | | |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 30 | 13 | 790 | 100 |
| | | | | | | |
| % Moisture | 1 | % | 9.2 | 9.7 | 16 | 7.8 |

| **Client Sample ID** | | | **TP13_1.0** | **TP17_0.1** | **TP17_0.8** | **TP17_1.2** |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins \| mgt Sample No.** | | | **M18-De25167** | **M18-De25168** | **M18-De25169** | **M18-De25170** |
| **Date Sampled** | | | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** |
| Test/Reference | LOR | Unit | | | | |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 130 | 570 | 35 | 15 |
| | | | | | | |
| % Moisture | 1 | % | 7.8 | 12 | 7.7 | 7.3 |

## 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 |
|---|---|---|---|
| Heavy Metals | Melbourne | Dec 19, 2018 | 180 Day |
| - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS | | | |
| % Moisture | Melbourne | Dec 19, 2018 | 14 Day |
| - Method: LTM-GEN-7080 Moisture | | | |

eurofins | mgt

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

**Melbourne**
2-5 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

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

**Company Name:** SLR Consulting (Sydney)
**Address:** 2 Lincoln St
Lane Cove West
NSW 2066

**Project Name:** PROTEN TAMWORTH SCA
**Project ID:** 610.18456.00100

**Order No.:**
**Report #:** 633738
**Phone:** 02 9428 8100
**Fax:**

**Received:** Dec 19, 2018 10:43 AM
**Due:** Dec 21, 2018
**Priority:** 2 Day
**Contact Name:** Ben Dewhurst

**Eurofins | mgt Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Arsenic | Moisture Set |
|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | X | X |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | |
| **External Laboratory** | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | |
| 1 | TP03_0.2 | Dec 06, 2018 | | Soil | M18-De25159 | X | X |
| 2 | TP03_0.6 | Dec 06, 2018 | | Soil | M18-De25160 | X | X |
| 3 | TP03_1.1 | Dec 06, 2018 | | Soil | M18-De25161 | X | X |
| 4 | TP08_0.1 | Dec 06, 2018 | | Soil | M18-De25162 | X | X |
| 5 | TP08_0.5 | Dec 06, 2018 | | Soil | M18-De25163 | X | X |
| 6 | TP08_1.0 | Dec 06, 2018 | | Soil | M18-De25164 | X | X |
| 7 | TP13_0.2 | Dec 06, 2018 | | Soil | M18-De25165 | X | X |
| 8 | TP13_0.6 | Dec 06, 2018 | | Soil | M18-De25166 | X | X |
| 9 | TP13_1.0 | Dec 06, 2018 | | Soil | M18-De25167 | X | X |

eurofins | mgt

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

**Melbourne**
2-5 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

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

| | | | | | |
|---|---|---|---|---|---|
| **Company Name:** | SLR Consulting (Sydney) | **Order No.:** | | **Received:** | Dec 19, 2018 10:43 AM |
| **Address:** | 2 Lincoln St<br>Lane Cove West<br>NSW 2066 | **Report #:**<br>**Phone:**<br>**Fax:** | 633738<br>02 9428 8100 | **Due:**<br>**Priority:**<br>**Contact Name:** | Dec 21, 2018<br>2 Day<br>Ben Dewhurst |
| **Project Name:** | PROTEN TAMWORTH SCA | | | | |
| **Project ID:** | 610.18456.00100 | | | | |

**Eurofins | mgt Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Arsenic | Moisture Set |
|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | X | X |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | |
| 10 | TP17_0.1 | Dec 06, 2018 | | Soil | M18-De25168 | X | X |
| 11 | TP17_0.8 | Dec 06, 2018 | | Soil | M18-De25169 | X | X |
| 12 | TP17_1.2 | Dec 06, 2018 | | Soil | M18-De25170 | X | X |
| **Test Counts** | | | | | | 12 | 12 |

## 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. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

### Holding Times

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

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

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

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

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

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

### Units

**mg/kg:** milligrams per kilogram

**mg/L:** milligrams per litre

**ug/L:** micrograms per litre

**ppm:** Parts per million

**ppb:** Parts per billion

**%:** Percentage

**org/100mL:** Organisms per 100 millilitres

**NTU:** Nephelometric Turbidity Units

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

### Terms

| | |
|---|---|
| **Dry** | Where a moisture has been determined on a solid sample the result is expressed on a dry basis. |
| **LOR** | Limit of Reporting. |
| **SPIKE** | Addition of the analyte to the sample and reported as percentage recovery. |
| **RPD** | Relative Percent Difference between two Duplicate pieces of analysis. |
| **LCS** | Laboratory Control Sample - reported as percent recovery. |
| **CRM** | Certified Reference Material - reported as percent recovery. |
| **Method Blank** | In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water. |
| **Surr - Surrogate** | The addition of a like compound to the analyte target and reported as percentage recovery. |
| **Duplicate** | A second piece of analysis from the same sample and reported in the same units as the result to show comparison. |
| **USEPA** | United States Environmental Protection Agency |
| **APHA** | American Public Health Association |
| **TCLP** | Toxicity Characteristic Leaching Procedure |
| **COC** | Chain of Custody |
| **SRA** | Sample Receipt Advice |
| **QSM** | Quality Systems Manual ver 5.1 US Department of Defense |
| **CP** | Client Parent - QC was performed on samples pertaining to this report |
| **NCP** | Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within. |
| **TEQ** | Toxic Equivalency Quotient |

### QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

### QC Data General Comments

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

**Quality Control Results**

| Test | Lab Sample ID | QA Source | Units | Result 1 | Result 2 | RPD | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| **Method Blank** | | | | | | | | | |
| **Heavy Metals** | | | | | | | | | |
| Arsenic | | | mg/kg | < 2 | | | 2 | Pass | |
| **LCS - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | | | | | | |
| Arsenic | | | % | 93 | | | 80-120 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Spike - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | | | | | |
| Arsenic | M18-De25162 | CP | % | 94 | | | 75-125 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| % Moisture | M18-De25159 | CP | % | 14 | 13 | 4.0 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | M18-De25161 | CP | mg/kg | 17 | 17 | 4.0 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | M18-De25162 | CP | mg/kg | 130 | 130 | 2.0 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| % Moisture | M18-De25169 | CP | % | 7.7 | 7.3 | 5.0 | 30% | Pass | |

## Comments

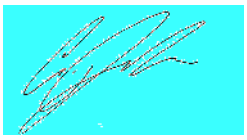
Eurofins | mgt accreditation number 1261, corporate site 1254 and 14271 is currently in progress of a controlled transition to a new custom built location at 6 Monterey Road, Dandenong South, Victoria 3175. All results on this report denoted as being performed by Eurofins | mgt 2-5 Kingston Town Close, Oakleigh Victoria 3166 corporate site 1254, will have been performed on either Oakleigh or new Dandenong South site.

## Sample Integrity

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

## Authorised By

| | |
|---|---|
| Andrew Black | Analytical Services Manager |
| Chris Bennett | Senior Analyst-Metal (VIC) |



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

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

**SLR Consulting**
**2 Lincoln St**
**Lane Cove West**
**NSW 2066**

**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:** **Ben Dewhurst**

**Report** **634417-S**
Project name PROTEN TAMWORTH SCA
Project ID 610.18456.00100
Received Date Dec 21, 2018

| **Client Sample ID** | | | **TP04_0.2** | **TP04_0.7** | **TP04_1.1** | **TP09_0.1** |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins \| mgt Sample No.** | | | **M18-De30955** | **M18-De30956** | **M18-De30957** | **M18-De30958** |
| **Date Sampled** | | | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** |
| Test/Reference | LOR | Unit | | | | |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 140 | 20 | 3.6 | 39 |
| | | | | | | |
| % Moisture | 1 | % | 14 | 12 | 5.6 | 16 |

| **Client Sample ID** | | | **TP09_0.5** | **TP09_0.9** | **TP14_0.2** | **TP14_0.6** |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins \| mgt Sample No.** | | | **M18-De30959** | **M18-De30960** | **M18-De30961** | **M18-De30962** |
| **Date Sampled** | | | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** |
| Test/Reference | LOR | Unit | | | | |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 7.2 | 2.3 | 490 | 140 |
| | | | | | | |
| % Moisture | 1 | % | 8.8 | 6.1 | 13 | 6.2 |

| **Client Sample ID** | | | **TP14_1.1** |
|---|---|---|---|
| **Sample Matrix** | | | **Soil** |
| **Eurofins \| mgt Sample No.** | | | **M18-De30963** |
| **Date Sampled** | | | **Dec 06, 2018** |
| Test/Reference | LOR | Unit | |
| **Heavy Metals** | | | |
| Arsenic | 2 | mg/kg | 21 |
| | | | |
| % Moisture | 1 | % | 6.7 |

## 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 |
|---|---|---|---|
| Heavy Metals | Melbourne | Dec 27, 2018 | 180 Day |
| - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS | | | |
| % Moisture | Melbourne | Dec 27, 2018 | 14 Day |
| - Method: LTM-GEN-7080 Moisture | | | |

eurofins | mgt

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

**Melbourne**
2-5 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

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

**Company Name:** SLR Consulting (Sydney)
**Address:** 2 Lincoln St
Lane Cove West
NSW 2066

**Project Name:** PROTEN TAMWORTH SCA
**Project ID:** 610.18456.00100

**Order No.:**
**Report #:** 634417
**Phone:** 02 9428 8100
**Fax:**

**Received:** Dec 21, 2018 11:45 AM
**Due:** Jan 2, 2019
**Priority:** 3 Day
**Contact Name:** Ben Dewhurst

**Eurofins | mgt Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Arsenic | Moisture Set |
|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | X | X |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | |
| **External Laboratory** | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | |
| 1 | TP04_0.2 | Dec 06, 2018 | | Soil | M18-De30955 | X | X |
| 2 | TP04_0.7 | Dec 06, 2018 | | Soil | M18-De30956 | X | X |
| 3 | TP04_1.1 | Dec 06, 2018 | | Soil | M18-De30957 | X | X |
| 4 | TP09_0.1 | Dec 06, 2018 | | Soil | M18-De30958 | X | X |
| 5 | TP09_0.5 | Dec 06, 2018 | | Soil | M18-De30959 | X | X |
| 6 | TP09_0.9 | Dec 06, 2018 | | Soil | M18-De30960 | X | X |
| 7 | TP14_0.2 | Dec 06, 2018 | | Soil | M18-De30961 | X | X |
| 8 | TP14_0.6 | Dec 06, 2018 | | Soil | M18-De30962 | X | X |
| 9 | TP14_1.1 | Dec 06, 2018 | | Soil | M18-De30963 | X | X |

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

**Melbourne**
2-5 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

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

| | | | | | |
|---|---|---|---|---|---|
| **Company Name:** | SLR Consulting (Sydney) | **Order No.:** | | **Received:** | Dec 21, 2018 11:45 AM |
| **Address:** | 2 Lincoln St<br>Lane Cove West<br>NSW 2066 | **Report #:** | 634417 | **Due:** | Jan 2, 2019 |
| | | **Phone:** | 02 9428 8100 | **Priority:** | 3 Day |
| | | **Fax:** | | **Contact Name:** | Ben Dewhurst |
| **Project Name:** | PROTEN TAMWORTH SCA | | | | |
| **Project ID:** | 610.18456.00100 | | | | |

**Eurofins | mgt Analytical Services Manager : Andrew Black**

| Sample Detail | Arsenic | Moisture Set |
|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | X | X |
| **Sydney Laboratory - NATA Site # 18217** | | |
| **Brisbane Laboratory - NATA Site # 20794** | | |
| **Perth Laboratory - NATA Site # 23736** | | |
| **Test Counts** | 9 | 9 |

## 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. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

### Holding Times

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

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

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

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

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

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

### Units

**mg/kg:** milligrams per kilogram

**mg/L:** milligrams per litre

**ug/L:** micrograms per litre

**ppm:** Parts per million

**ppb:** Parts per billion

**%:** Percentage

**org/100mL:** Organisms per 100 millilitres

**NTU:** Nephelometric Turbidity Units

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

### Terms

| | |
|---|---|
| **Dry** | Where a moisture has been determined on a solid sample the result is expressed on a dry basis. |
| **LOR** | Limit of Reporting. |
| **SPIKE** | Addition of the analyte to the sample and reported as percentage recovery. |
| **RPD** | Relative Percent Difference between two Duplicate pieces of analysis. |
| **LCS** | Laboratory Control Sample - reported as percent recovery. |
| **CRM** | Certified Reference Material - reported as percent recovery. |
| **Method Blank** | In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water. |
| **Surr - Surrogate** | The addition of a like compound to the analyte target and reported as percentage recovery. |
| **Duplicate** | A second piece of analysis from the same sample and reported in the same units as the result to show comparison. |
| **USEPA** | United States Environmental Protection Agency |
| **APHA** | American Public Health Association |
| **TCLP** | Toxicity Characteristic Leaching Procedure |
| **COC** | Chain of Custody |
| **SRA** | Sample Receipt Advice |
| **QSM** | Quality Systems Manual ver 5.1 US Department of Defense |
| **CP** | Client Parent - QC was performed on samples pertaining to this report |
| **NCP** | Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within. |
| **TEQ** | Toxic Equivalency Quotient |

### QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

### QC Data General Comments

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

**Quality Control Results**

| Test | Lab Sample ID | QA Source | Units | Result 1 | Result 2 | RPD | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| **Method Blank** | | | | | | | | | |
| **Heavy Metals** | | | | | | | | | |
| Arsenic | | | mg/kg | < 2 | | | 2 | Pass | |
| **LCS - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | | | | | | |
| Arsenic | | | % | 114 | | | 80-120 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Spike - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | | | | | |
| Arsenic | M18-De30959 | CP | % | 133 | | | 75-125 | Fail | Q08 |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| % Moisture | M18-De30957 | CP | % | 5.6 | 6.2 | 10 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | M18-De30958 | CP | mg/kg | 39 | 40 | 3.0 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | M18-De30959 | CP | mg/kg | 7.2 | 7.8 | 8.0 | 30% | Pass | |

## Comments

Eurofins | mgt accreditation number 1261, corporate site 1254 and 14271 is currently in progress of a controlled transition to a new custom built location at 6 Monterey Road, Dandenong South, Victoria 3175. All results on this report denoted as being performed by Eurofins | mgt 2-5 Kingston Town Close, Oakleigh Victoria 3166 corporate site 1254, will have been performed on either Oakleigh or new Dandenong South site.

## Sample Integrity

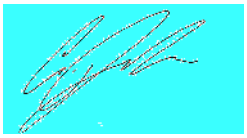
| | |
|---|---|
| Custody Seals Intact (if used) | N/A |
| Attempt to Chill was evident | Yes |
| Sample correctly preserved | Yes |
| Appropriate sample containers have been used | Yes |
| Sample containers for volatile analysis received with minimal headspace | Yes |
| Samples received within HoldingTime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

## Qualifier Codes/Comments

| Code | Description |
|---|---|
| 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

| | |
|---|---|
| Andrew Black | Analytical Services Manager |
| Chris Bennett | Senior Analyst-Metal (VIC) |



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

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

**SLR Consulting**
**2 Lincoln St**
**Lane Cove West**
**NSW 2066**

**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:** **Ben Dewhurst**

**Report** **634849-S**
Project name PROTEN TAMWORTH SCA
Project ID 610.18456.00100
Received Date Jan 07, 2019

| **Client Sample ID** | | | **TP05_0.2** | **TP05_0.6** | **TP05_1.1** | **TP15_0.2** |
|---|---|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** | **Soil** | **Soil** |
| **Eurofins \| mgt Sample No.** | | | **M19-Ja01585** | **M19-Ja01586** | **M19-Ja01587** | **M19-Ja01588** |
| **Date Sampled** | | | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** | **Dec 06, 2018** |
| Test/Reference | LOR | Unit | | | | |
| **Heavy Metals** | | | | | | |
| Arsenic | 2 | mg/kg | 62 | 6.3 | 5.0 | 190 |
| | | | | | | |
| % Moisture | 1 | % | 15 | 9.0 | 6.9 | 11 |

| **Client Sample ID** | | | **TP15_0.7** | **TP15_1.2** |
|---|---|---|---|---|
| **Sample Matrix** | | | **Soil** | **Soil** |
| **Eurofins \| mgt Sample No.** | | | **M19-Ja01589** | **M19-Ja01590** |
| **Date Sampled** | | | **Dec 06, 2018** | **Dec 06, 2018** |
| Test/Reference | LOR | Unit | | |
| **Heavy Metals** | | | | |
| Arsenic | 2 | mg/kg | 19 | 19 |
| | | | | |
| % Moisture | 1 | % | 8.3 | 7.9 |

## 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 |
|---|---|---|---|
| Heavy Metals | Melbourne | Jan 08, 2019 | 180 Day |
| - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS | | | |
| % Moisture | Melbourne | Jan 07, 2019 | 14 Day |
| - Method: LTM-GEN-7080 Moisture | | | |

eurofins | mgt

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

**Melbourne**
2-5 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

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

**Company Name:** SLR Consulting (Sydney)
**Address:** 2 Lincoln St
Lane Cove West
NSW 2066

**Project Name:** PROTEN TAMWORTH SCA
**Project ID:** 610.18456.00100

**Order No.:**
**Report #:** 634849
**Phone:** 02 9428 8100
**Fax:**

**Received:** Jan 7, 2019 9:54 AM
**Due:** Jan 10, 2019
**Priority:** 3 Day
**Contact Name:** Ben Dewhurst

**Eurofins | mgt Analytical Services Manager : Andrew Black**

| Sample Detail | | | | | | Arsenic | Moisture Set |
|---|---|---|---|---|---|---|---|
| **Melbourne Laboratory - NATA Site # 1254 & 14271** | | | | | | X | X |
| **Sydney Laboratory - NATA Site # 18217** | | | | | | | |
| **Brisbane Laboratory - NATA Site # 20794** | | | | | | | |
| **Perth Laboratory - NATA Site # 23736** | | | | | | | |
| **External Laboratory** | | | | | | | |
| **No** | **Sample ID** | **Sample Date** | **Sampling Time** | **Matrix** | **LAB ID** | | |
| 1 | TP05_0.2 | Dec 06, 2018 | | Soil | M19-Ja01585 | X | X |
| 2 | TP05_0.6 | Dec 06, 2018 | | Soil | M19-Ja01586 | X | X |
| 3 | TP05_1.1 | Dec 06, 2018 | | Soil | M19-Ja01587 | X | X |
| 4 | TP15_0.2 | Dec 06, 2018 | | Soil | M19-Ja01588 | X | X |
| 5 | TP15_0.7 | Dec 06, 2018 | | Soil | M19-Ja01589 | X | X |
| 6 | TP15_1.2 | Dec 06, 2018 | | Soil | M19-Ja01590 | X | X |
| **Test Counts** | | | | | | 6 | 6 |

## 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. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

### Holding Times

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

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

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

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

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

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

### Units

**mg/kg:** milligrams per kilogram

**mg/L:** milligrams per litre

**ug/L:** micrograms per litre

**ppm:** Parts per million

**ppb:** Parts per billion

**%:** Percentage

**org/100mL:** Organisms per 100 millilitres

**NTU:** Nephelometric Turbidity Units

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

### Terms

| | |
|---|---|
| **Dry** | Where a moisture has been determined on a solid sample the result is expressed on a dry basis. |
| **LOR** | Limit of Reporting. |
| **SPIKE** | Addition of the analyte to the sample and reported as percentage recovery. |
| **RPD** | Relative Percent Difference between two Duplicate pieces of analysis. |
| **LCS** | Laboratory Control Sample - reported as percent recovery. |
| **CRM** | Certified Reference Material - reported as percent recovery. |
| **Method Blank** | In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water. |
| **Surr - Surrogate** | The addition of a like compound to the analyte target and reported as percentage recovery. |
| **Duplicate** | A second piece of analysis from the same sample and reported in the same units as the result to show comparison. |
| **USEPA** | United States Environmental Protection Agency |
| **APHA** | American Public Health Association |
| **TCLP** | Toxicity Characteristic Leaching Procedure |
| **COC** | Chain of Custody |
| **SRA** | Sample Receipt Advice |
| **QSM** | Quality Systems Manual ver 5.1 US Department of Defense |
| **CP** | Client Parent - QC was performed on samples pertaining to this report |
| **NCP** | Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within. |
| **TEQ** | Toxic Equivalency Quotient |

### QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

### QC Data General Comments

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

**Quality Control Results**

| Test | Lab Sample ID | QA Source | Units | Result 1 | Result 2 | RPD | Acceptance Limits | Pass Limits | Qualifying Code |
|---|---|---|---|---|---|---|---|---|---|
| **Method Blank** | | | | | | | | | |
| **Heavy Metals** | | | | | | | | | |
| Arsenic | | | mg/kg | < 2 | | | 2 | Pass | |
| **LCS - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | | | | | | |
| Arsenic | | | % | 100 | | | 80-120 | Pass | |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Spike - % Recovery** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | | | | | |
| Arsenic | M19-Ja01588 | CP | % | 173 | | | 75-125 | Fail | Q08 |
| **Test** | **Lab Sample ID** | **QA Source** | **Units** | **Result 1** | | | **Acceptance Limits** | **Pass Limits** | **Qualifying Code** |
| **Duplicate** | | | | | | | | | |
| | | | | Result 1 | Result 2 | RPD | | | |
| % Moisture | M19-Ja01559 | NCP | % | 26 | 27 | <1 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | M19-Ja01587 | CP | mg/kg | 5.0 | 5.0 | 2.0 | 30% | Pass | |
| **Duplicate** | | | | | | | | | |
| **Heavy Metals** | | | | Result 1 | Result 2 | RPD | | | |
| Arsenic | M19-Ja01588 | CP | mg/kg | 190 | 200 | 2.0 | 30% | Pass | |

## Comments

Eurofins | mgt accreditation number 1261, corporate site 1254 and 14271 is currently in progress of a controlled transition to a new custom built location at 6 Monterey Road, Dandenong South, Victoria 3175. All results on this report denoted as being performed by Eurofins | mgt 2-5 Kingston Town Close, Oakleigh Victoria 3166 corporate site 1254, will have been performed on either Oakleigh or new Dandenong South site.

## Sample Integrity

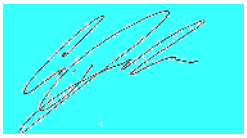
| | |
|---|---|
| Custody Seals Intact (if used) | N/A |
| Attempt to Chill was evident | Yes |
| Sample correctly preserved | Yes |
| Appropriate sample containers have been used | Yes |
| Sample containers for volatile analysis received with minimal headspace | Yes |
| Samples received within HoldingTime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

## Qualifier Codes/Comments

| Code | Description |
|---|---|
| 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

| | |
|---|---|
| Andrew Black | Analytical Services Manager |
| Chris Bennett | Senior Analyst-Metal (VIC) |



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

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

ALS Environmental

# CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| **Work Order** | : **ES1837035** | Page | : 1 of 6 |
| Client | : **SLR Consulting Australia Pty Ltd** | Laboratory | : Environmental Division Sydney |
| Contact | : JUNAIDI IBRAHIM | Contact | : Tyler Cachia |
| Address | : PO BOX 176 2/2 LINCOLN ST LANECOVE NSW, AUSTRALIA 1595 | Address | : 277-289 Woodpark Road Smithfield NSW Australia 2164 |
| Telephone | : ---- | Telephone | : +61 2 8784 8555 |
| Project | : 610.18456.00100 PoTen Tamworth SCA | Date Samples Received | : 10-Dec-2018 11:18 |
| Order number | : | Date Analysis Commenced | : 21-Dec-2018 |
| C-O-C number | : ---- | Issue Date | : 03-Jan-2019 15:42 |
| Sampler | : ---- | | |
| Site | : ---- | | |
| Quote number | : EN/333 Secondary work BQ | | |
| No. of samples received | : 2 | | |
| No. of samples analysed | : 2 | | |

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* |
|---|---|---|
| Alex Rossi | Organic Chemist | Sydney Inorganics, Smithfield, NSW |
| Alex Rossi | Organic Chemist | Sydney Organics, Smithfield, NSW |
| Diana Mesa | 2IC Organic Chemist | Brisbane Organics, Stafford, QLD |
| Ivan Taylor | Analyst | Sydney Inorganics, Smithfield, NSW |

## 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
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP094: The LOR for 'QC6' has been raised due to spectral interference.

## Analytical Results

| Sub-Matrix: SOIL (Matrix: SOIL) | | | Client sample ID | QC2 | QC6 | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|
| | | | Client sampling date / time | 06-Dec-2018 00:00 | 06-Dec-2018 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | ES1837035-001 | ES1837035-002 | -------- | -------- | -------- |
| | | | | Result | Result | ---- | ---- | ---- |
| **EA055: Moisture Content (Dried @ 105-110°C)** | | | | | | | | |
| Moisture Content | ---- | 1.0 | % | **19.4** | **13.3** | ---- | ---- | ---- |
| **EG005T: Total Metals by ICP-AES** | | | | | | | | |
| Arsenic | 7440-38-2 | 5 | mg/kg | **623** | **354** | ---- | ---- | ---- |
| Cadmium | 7440-43-9 | 1 | mg/kg | **2** | <1 | ---- | ---- | ---- |
| Chromium | 7440-47-3 | 2 | mg/kg | **11** | **11** | ---- | ---- | ---- |
| Copper | 7440-50-8 | 5 | mg/kg | **44** | **43** | ---- | ---- | ---- |
| Lead | 7439-92-1 | 5 | mg/kg | **107** | **43** | ---- | ---- | ---- |
| Nickel | 7440-02-0 | 2 | mg/kg | **8** | **11** | ---- | ---- | ---- |
| Zinc | 7440-66-6 | 5 | mg/kg | **839** | **243** | ---- | ---- | ---- |
| **EG035T: Total Recoverable Mercury by FIMS** | | | | | | | | |
| Mercury | 7439-97-6 | 0.1 | mg/kg | **0.8** | **0.3** | ---- | ---- | ---- |
| **EP068A: Organochlorine Pesticides (OC)** | | | | | | | | |
| alpha-BHC | 319-84-6 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| Hexachlorobenzene (HCB) | 118-74-1 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| beta-BHC | 319-85-7 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| gamma-BHC | 58-89-9 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| delta-BHC | 319-86-8 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| Heptachlor | 76-44-8 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| Aldrin | 309-00-2 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| Heptachlor epoxide | 1024-57-3 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| ^ Total Chlordane (sum) | ---- | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| trans-Chlordane | 5103-74-2 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| alpha-Endosulfan | 959-98-8 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| cis-Chlordane | 5103-71-9 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| Dieldrin | 60-57-1 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| 4.4`-DDE | 72-55-9 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| Endrin | 72-20-8 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| beta-Endosulfan | 33213-65-9 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| ^ Endosulfan (sum) | 115-29-7 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| 4.4`-DDD | 72-54-8 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| Endrin aldehyde | 7421-93-4 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| Endosulfan sulfate | 1031-07-8 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| 4.4`-DDT | 50-29-3 | 0.2 | mg/kg | <0.2 | <0.2 | ---- | ---- | ---- |
| Endrin ketone | 53494-70-5 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |

## Analytical Results

| Sub-Matrix: SOIL (Matrix: SOIL) | | | | Client sample ID | QC2 | QC6 | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Client sampling date / time | 06-Dec-2018 00:00 | 06-Dec-2018 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | ES1837035-001 | ES1837035-002 | -------- | -------- | -------- |
| | | | | | Result | Result | ---- | ---- | ---- |
| **EP068A: Organochlorine Pesticides (OC) - Continued** | | | | | | | | | |
| Methoxychlor | 72-43-5 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | ---- | ---- |
| ^ Sum of Aldrin + Dieldrin | 309-00-2/60-57-1 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| ^ Sum of DDD + DDE + DDT | 72-54-8/72-55-9/50-2 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| **EP068B: Organophosphorus Pesticides (OP)** | | | | | | | | | |
| Dichlorvos | 62-73-7 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Demeton-S-methyl | 919-86-8 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Monocrotophos | 6923-22-4 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | ---- | ---- |
| Dimethoate | 60-51-5 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Diazinon | 333-41-5 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Chlorpyrifos-methyl | 5598-13-0 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Parathion-methyl | 298-00-0 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | ---- | ---- |
| Malathion | 121-75-5 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Fenthion | 55-38-9 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Chlorpyrifos | 2921-88-2 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Parathion | 56-38-2 | 0.2 | mg/kg | | <0.2 | <0.2 | ---- | ---- | ---- |
| Pirimphos-ethyl | 23505-41-1 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Chlorfenvinphos | 470-90-6 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Bromophos-ethyl | 4824-78-6 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Fenamiphos | 22224-92-6 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Prothiofos | 34643-46-4 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Ethion | 563-12-2 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Carbophenothion | 786-19-6 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Azinphos Methyl | 86-50-0 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| **EP094A: Synthetic Pyrethroids** | | | | | | | | | |
| Bioresmethrin | 28434-01-07 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Bifenthrin | 82657-04-3 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Phenothrin | 26002-80-2 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Lambda-cyhalothrin | 68085-85-8 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Permethrin | 52645-53-1 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Cyfluthrin | 68359-37-5 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Cypermethrin | 52315-07-8 | 0.05 | mg/kg | | <0.05 | <0.05 | ---- | ---- | ---- |
| Fenvalverate & Esfenvalerate | 51630-58-1/66230-04- | 0.05 | mg/kg | | <0.05 | <0.18 | ---- | ---- | ---- |

## Analytical Results

| Sub-Matrix: SOIL (Matrix: SOIL) | | | Client sample ID | QC2 | QC6 | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|
| | | | Client sampling date / time | 06-Dec-2018 00:00 | 06-Dec-2018 00:00 | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | ES1837035-001 | ES1837035-002 | -------- | -------- | -------- |
| | | | | Result | Result | ---- | ---- | ---- |
| **EP094A: Synthetic Pyrethroids - Continued** | | | | | | | | |
| **Deltamethrin & Tralomethrin** | 62229-77-0/66841-25- | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| **Allethrin** | 584-79-2 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| **Transfluthrin** | 118712-89-3 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| **Tetramethrin** | 7696-12-0 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| **Tau-fluvalinate** | 102851-06-9 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| **EP094B: Synergist** | | | | | | | | |
| **Piperonyl Butoxide** | 63993-73-7 | 0.05 | mg/kg | <0.05 | <0.05 | ---- | ---- | ---- |
| **EP201: Carbamate Pesticides by LCMS** | | | | | | | | |
| **Oxamyl** | 23135-22-0 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| **Methomyl** | 16752-77-5 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| **3-Hydroxy Carbofuran** | 16655-82-6 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| **Aldicarb** | 116-06-3 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| **Bendiocarb** | 22781-23-3 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| **Thiodicarb** | 59669-26-0 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| **Carbofuran** | 1563-66-2 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| **Carbaryl** | 63-25-2 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| **Methiocarb** | 2032-65-7 | 0.02 | mg/kg | <0.02 | <0.02 | ---- | ---- | ---- |
| **EP068S: Organochlorine Pesticide Surrogate** | | | | | | | | |
| **Dibromo-DDE** | 21655-73-2 | 0.05 | % | **64.8** | **85.2** | ---- | ---- | ---- |
| **EP068T: Organophosphorus Pesticide Surrogate** | | | | | | | | |
| **DEF** | 78-48-8 | 0.05 | % | **62.9** | **83.8** | ---- | ---- | ---- |
| **EP094S: Pesticide Surrogate** | | | | | | | | |
| **DEF** | 78-48-8 | 0.05 | % | **108** | **108** | ---- | ---- | ---- |
| **EP201S: Carbamate Surrogate** | | | | | | | | |
| **4-Bromo-3.5-dimethylphenyl-N-methylcarbamate** | 672-99-1 | 0.02 | % | **82.5** | **92.1** | ---- | ---- | ---- |

## Surrogate Control Limits

| Sub-Matrix: SOIL | | Recovery Limits (%) | |
|---|---|---|---|
| Compound | CAS Number | Low | High |
| **EP068S: Organochlorine Pesticide Surrogate** | | | |
| Dibromo-DDE | 21655-73-2 | 49 | 147 |
| **EP068T: Organophosphorus Pesticide Surrogate** | | | |
| DEF | 78-48-8 | 35 | 143 |
| **EP094S: Pesticide Surrogate** | | | |
| DEF | 78-48-8 | 10 | 110 |
| **EP201S: Carbamate Surrogate** | | | |
| 4-Bromo-3.5-dimethylphenyl-N-methylcarbamate | 672-99-1 | 59 | 137 |

ALS Environmental

# CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| **Work Order** | : **ES1832597** | Page | : 1 of 6 |
| Client | : **SLR Consulting Australia Pty Ltd** | Laboratory | : Environmental Division Sydney |
| Contact | : JUNAIDI IBRAHIM | Contact | : Tyler Cachia |
| Address | : PO BOX 176 2/2 LINCOLN ST<br>LANECOVE NSW, AUSTRALIA 1595 | Address | : 277-289 Woodpark Road Smithfield NSW Australia 2164 |
| Telephone | : ---- | Telephone | : +61 2 8784 8555 |
| Project | : 610.18456 DSI ProTen Tamworth | Date Samples Received | : 01-Nov-2018 15:23 |
| Order number | : | Date Analysis Commenced | : 05-Nov-2018 |
| C-O-C number | : ---- | Issue Date | : 08-Nov-2018 16:30 |
| Sampler | : Junaidi Ibrahim | | |
| Site | : | | |
| Quote number | : EN/032/17 | | |
| 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* |
|---|---|---|
| Celine Conceicao | Senior Spectroscopist | Sydney Inorganics, Smithfield, NSW |
| Diana Mesa | 2IC Organic Chemist | Brisbane Organics, Stafford, QLD |
| Edwandy Fadjar | Organic Coordinator | Sydney Inorganics, Smithfield, NSW |
| Edwandy Fadjar | Organic Coordinator | Sydney Organics, Smithfield, NSW |
| Franco Lentini | | Sydney Organics, Smithfield, NSW |

## 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
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

## Analytical Results

| Sub-Matrix: SOIL (Matrix: SOIL) | | | Client sample ID | QC2 | ---- | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|
| | | | Client sampling date / time | 30-Oct-2018 00:00 | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | ES1832597-001 | -------- | -------- | -------- | -------- |
| | | | | Result | ---- | ---- | ---- | ---- |
| **EA055: Moisture Content (Dried @ 105-110°C)** | | | | | | | | |
| **Moisture Content** | ---- | 1.0 | % | **16.3** | ---- | ---- | ---- | ---- |
| **EG005T: Total Metals by ICP-AES** | | | | | | | | |
| **Arsenic** | 7440-38-2 | 5 | mg/kg | **7** | ---- | ---- | ---- | ---- |
| **Cadmium** | 7440-43-9 | 1 | mg/kg | <1 | ---- | ---- | ---- | ---- |
| **Chromium** | 7440-47-3 | 2 | mg/kg | **17** | ---- | ---- | ---- | ---- |
| **Copper** | 7440-50-8 | 5 | mg/kg | **48** | ---- | ---- | ---- | ---- |
| **Lead** | 7439-92-1 | 5 | mg/kg | **13** | ---- | ---- | ---- | ---- |
| **Nickel** | 7440-02-0 | 2 | mg/kg | **16** | ---- | ---- | ---- | ---- |
| **Zinc** | 7440-66-6 | 5 | mg/kg | **63** | ---- | ---- | ---- | ---- |
| **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 | <0.05 | ---- | ---- | ---- | ---- |
| **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 | QC2 | ---- | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Client sampling date / time | 30-Oct-2018 00:00 | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | ES1832597-001 | -------- | -------- | -------- | -------- |
| | | | | | 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 | | <0.05 | ---- | ---- | ---- | ---- |
| ^ **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 | ---- | ---- | ---- | ---- |
| **EP068C: Triazines** | | | | | | | | | |
| **Atrazine** | 1912-24-9 | 0.05 | mg/kg | | <0.05 | ---- | ---- | ---- | ---- |
| **Simazine** | 122-34-9 | 0.05 | mg/kg | | <0.05 | ---- | ---- | ---- | ---- |
| **EP094A: Synthetic Pyrethroids** | | | | | | | | | |
| **Bioresmethrin** | 28434-01-07 | 0.05 | mg/kg | | <0.05 | ---- | ---- | ---- | ---- |
| **Bifenthrin** | 82657-04-3 | 0.05 | mg/kg | | <0.05 | ---- | ---- | ---- | ---- |
| **Phenothrin** | 26002-80-2 | 0.05 | mg/kg | | <0.05 | ---- | ---- | ---- | ---- |
| **Lambda-cyhalothrin** | 68085-85-8 | 0.05 | mg/kg | | <0.05 | ---- | ---- | ---- | ---- |
| **Permethrin** | 52645-53-1 | 0.05 | mg/kg | | <0.05 | ---- | ---- | ---- | ---- |
| **Cyfluthrin** | 68359-37-5 | 0.05 | mg/kg | | <0.05 | ---- | ---- | ---- | ---- |

## Analytical Results

| Sub-Matrix: SOIL (Matrix: SOIL) | | | | Client sample ID | QC2 | ---- | ---- | ---- | ---- |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Client sampling date / time | 30-Oct-2018 00:00 | ---- | ---- | ---- | ---- |
| Compound | CAS Number | LOR | Unit | | ES1832597-001 | -------- | -------- | -------- | -------- |
| | | | | | Result | ---- | ---- | ---- | ---- |
| **EP094A: Synthetic Pyrethroids - Continued** | | | | | | | | | |
| Cypermethrin | 52315-07-8 | 0.05 | mg/kg | | <0.05 | ---- | ---- | ---- | ---- |
| Fenvalverate & Esfenvalerate | 51630-58-1/66230-04- | 0.05 | mg/kg | | <0.05 | ---- | ---- | ---- | ---- |
| Deltamethrin & Tralomethrin | 62229-77-0/66841-25- | 0.05 | mg/kg | | <0.05 | ---- | ---- | ---- | ---- |
| Allethrin | 584-79-2 | 0.05 | mg/kg | | <0.05 | ---- | ---- | ---- | ---- |
| Transfluthrin | 118712-89-3 | 0.05 | mg/kg | | <0.05 | ---- | ---- | ---- | ---- |
| Tetramethrin | 7696-12-0 | 0.05 | mg/kg | | <0.05 | ---- | ---- | ---- | ---- |
| Tau-fluvalinate | 102851-06-9 | 0.05 | mg/kg | | <0.05 | ---- | ---- | ---- | ---- |
| **EP094B: Synergist** | | | | | | | | | |
| Piperonyl Butoxide | 63993-73-7 | 0.05 | mg/kg | | <0.05 | ---- | ---- | ---- | ---- |
| **EP201: Carbamate Pesticides by LCMS** | | | | | | | | | |
| Oxamyl | 23135-22-0 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| Methomyl | 16752-77-5 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| 3-Hydroxy Carbofuran | 16655-82-6 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| Aldicarb | 116-06-3 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| Bendiocarb | 22781-23-3 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| Thiodicarb | 59669-26-0 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| Carbofuran | 1563-66-2 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| Carbaryl | 63-25-2 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| Methiocarb | 2032-65-7 | 0.02 | mg/kg | | <0.02 | ---- | ---- | ---- | ---- |
| **EP068S: Organochlorine Pesticide Surrogate** | | | | | | | | | |
| Dibromo-DDE | 21655-73-2 | 0.05 | % | | **71.6** | ---- | ---- | ---- | ---- |
| **EP068T: Organophosphorus Pesticide Surrogate** | | | | | | | | | |
| DEF | 78-48-8 | 0.05 | % | | **74.8** | ---- | ---- | ---- | ---- |
| **EP094S: Pesticide Surrogate** | | | | | | | | | |
| DEF | 78-48-8 | 0.05 | % | | **117** | ---- | ---- | ---- | ---- |
| **EP201S: Carbamate Surrogate** | | | | | | | | | |
| 4-Bromo-3.5-dimethylphenyl-N-m ethylcarbamate | 672-99-1 | 0.02 | % | | **102** | ---- | ---- | ---- | ---- |

## Surrogate Control Limits

Sub-Matrix: **SOIL**

| Compound | CAS Number | Recovery Limits (%) Low | High |
|---|---|---|---|
| **EP068S: Organochlorine Pesticide Surrogate** | | | |
| **Dibromo-DDE** | 21655-73-2 | 49 | 147 |
| **EP068T: Organophosphorus Pesticide Surrogate** | | | |
| **DEF** | 78-48-8 | 35 | 143 |
| **EP094S: Pesticide Surrogate** | | | |
| **DEF** | 78-48-8 | 10 | 110 |
| **EP201S: Carbamate Surrogate** | | | |
| **4-Bromo-3.5-dimethylphenyl-N-methylcarbamate** | 672-99-1 | 59 | 137 |

# Appendix B

## Updated Unexpected Finds Procedure

### (SLR Consulting Australia)



# Unexpected Finds Procedure - Contamination
# Rushes Creek Poultry Production Farm
# Rushes Creek Road, Rushes Creek, NSW

## 1 Introduction

This Unexpected Finds Procedure (UFP – contamination) forms part of the Construction Environmental Management Plan (CEMP) for the proposed poultry production farm located at Rushes Creek Road, Rushes Creek, NSW (the site).

### 1.1 Background

The DSI titled 'Detailed Site Investigation Proposed Poultry Production Farm Rushes Creek Road, Rushes Creek NSW' dated February 2019 (SLR 2019) identified a small localised area of arsenic impacted shallow soils at the site. The arsenic impacted soils were considered to be associated with the former sheep dip at the site and required management in accordance with the approved Remedial Action Plan (RAP).

### 1.2 Purpose

This procedure details the actions to be taken in the event that potentially contaminated soil or material is unexpectedly encountered during the construction of the poultry farm (the Project). This procedure has been prepared to address the requirements of Condition B50 of the project approval (SSD 7704) granted by the Minister for Planning and Public Spaces on 16 April 2020, which states:

"*Prior to the commencement of earthworks, the Applicant must revise the unexpected contamination procedure in consultation with the EPA to ensure that potentially contaminated material is appropriately managed. The procedure must form part of the of the CEMP in accordance with condition C2 and must ensure any material identified as contaminated must be disposed off-site, with the disposal location and results of testing submitted to the Planning Secretary, prior to its removal from the site*".

### 1.3 Scope

This procedure applies to all work undertaken as part of the Project.

# 2 Procedure

If any suspected or potentially contaminated material (excluding the known arsenic impacted soil being remediated under the approved RAP) is encountered during the works, then the steps presented in **Figure 1** must be implemented as detailed below.

## 2.1 Step 1 – Stop Work

1. STOP ALL WORK within the vicinity of the actual or potentially contaminated land
    - Stopping works allows effective risk assessment and appropriate control review to take place
2. Immediately notify the Environmental Manager, who will promptly notify the Project Site Manager and where appropriate the relevant Authorities of the find.
    - Once works have stopped, an environmental consultant experienced in contaminated land management should be contacted to inspect the material/work area
3. Establish an exclusion zone around the area
4. Recommence works in an alternate area, where practicable.

## 2.2 Step 2 – Assess

1. The Environmental Manager will evaluate the situation and, if considered necessary, commission a suitably qualified contamination specialist to undertake a contamination investigation in the area of the find.
2. A report of the investigation will be prepared to determine the nature, extent and degree of any contamination, and to advise on the need for remediation or other action.
    - The level of reporting must be appropriate for the identified contamination in accordance with relevant NSW Environment Protection Authority (EPA) guidelines, including Contaminated Land Guidelines: Consultants Reporting on Contaminated Land (EPA, 2020). The report should also assess the requirement to notify the EPA.

## 2.3 Step 3 - Act

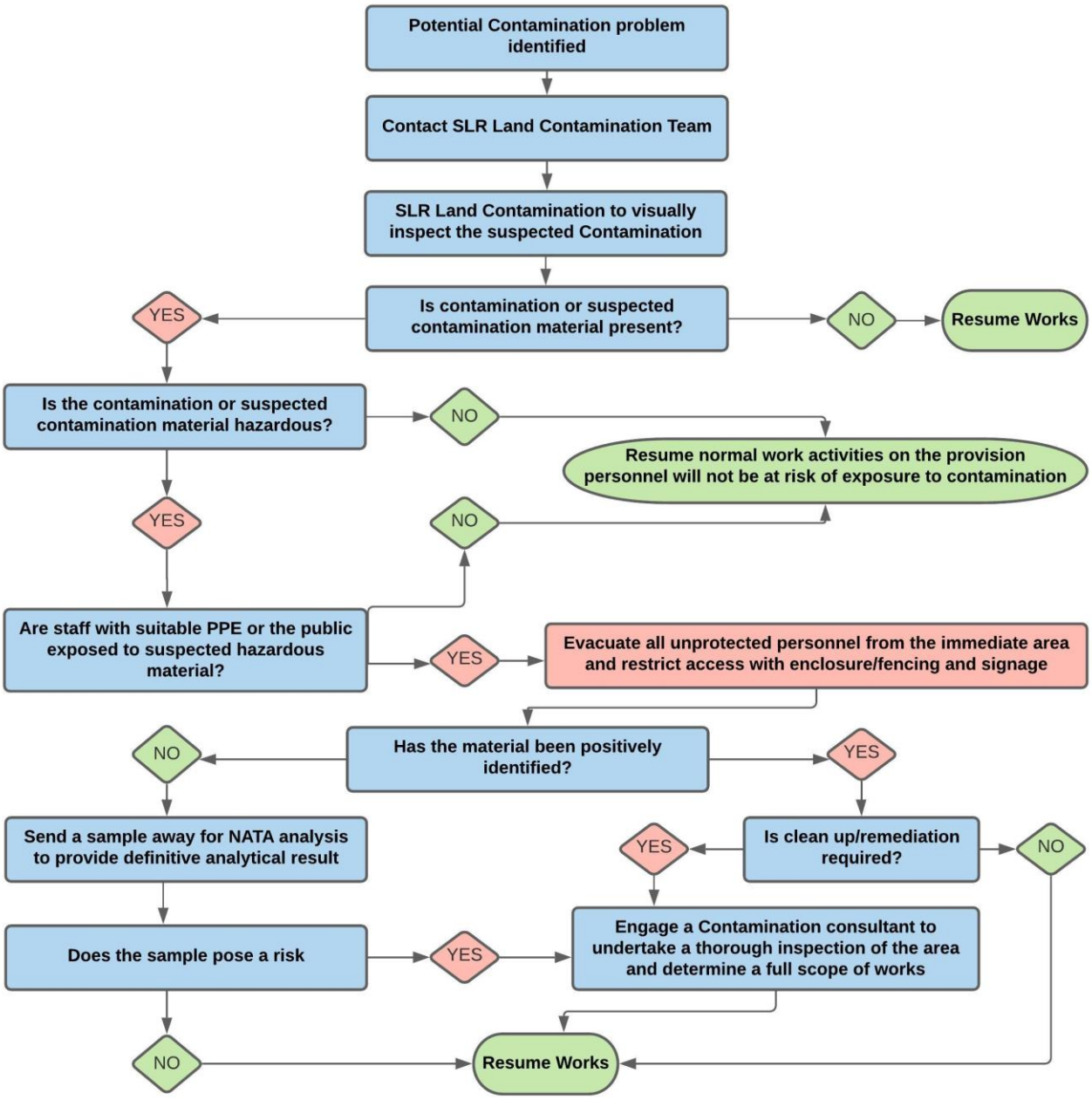
Depending on the findings of the Contamination Investigation:

1. Manage the unexpected find if the Contamination Investigation confirms the presence of contamination. This may include:
    - Classification of the material for offsite disposal at a licensed facility as per the Waste Classification Guidelines (EPA 2014).
    - Preparation of an addendum to the existing Remedial Action Plan for the site, in order to treat the material onsite. Carry out remediation of the contaminated material including validation of the material in accordance with NSW EPA guidelines.
    - Recommence works once remedial works have been implemented and validation received.
2. Recommence works if the Contamination Investigation confirms that the contamination does not to pose a risk to human health and / or the environment.

## 2.4 Step 4 - Monitor

1. Incorporate remedial actions into specific Safe Work Method Statements (SWMS), Environmental Work Method Statements (EWMS) and included in Toolbox discussions with the project team and subcontractors.

# *Figure 1: Unexpected Finds Procedure – Contamination*




## 3 Document Control

| Reference | Date | Prepared | Checked | Comment / Change |
|---|---|---|---|---|
| 610.30237.00000-L01-v1.0 | 06/04/2021 | JR | HS | Final |
| 610.30237.00000-L01-v0.2 | 31/03/2021 | JR | HS | First Issued |