Teys Australia Southern Property Pty Ltd

Relocation of TAFS Facility

Preliminary Environmental Assessment

September 2016

Table of contents

Table index

Figure index

Appendices

1. Introduction

1.1 Overview

Teys Australia Southern Property Pty Ltd (Teys) is proposing to relocate the Teys Australia Food Solutions (TAFS) facility, from within the existing Teys Wagga Wagga Beef Processing Facility to a site adjoining the existing facility (the Project). The proposed project site is on land owned and managed by Teys, immediately adjacent to the existing abattoir complex. The TAFS facility produces retail ready raw beef products using raw beef material sourced from the adjoining beef processing facility or other facilities around Australia.

The project site is located on the corner of Bomen Road and Jersey Street in Bomen, Wagga Wagga. The Project will involve the establishment of a new TAFS facility, within an enclosed building with approximately 12,000 m^2 of floor space, in addition to a number of external workshops, car parking and truck parking areas.

The current TAFS facility produces approximately 280 tonnes per week of retail ready uncooked/fresh beef products over five processing lines and six operating days. Relocation of the existing TAFS facility will allow for expansion commensurate with growth forecast predictions which indicate production is likely to exceed 750 tonnes per week by 2019. The Wagga Wagga Beef Processing Facility will continue to operate in accordance with current operational practices following the relocation of the TAFS facility.

The location of the project site is shown in Figure 1.1 and an overview of key features of the Project is shown in Figure 1.2.

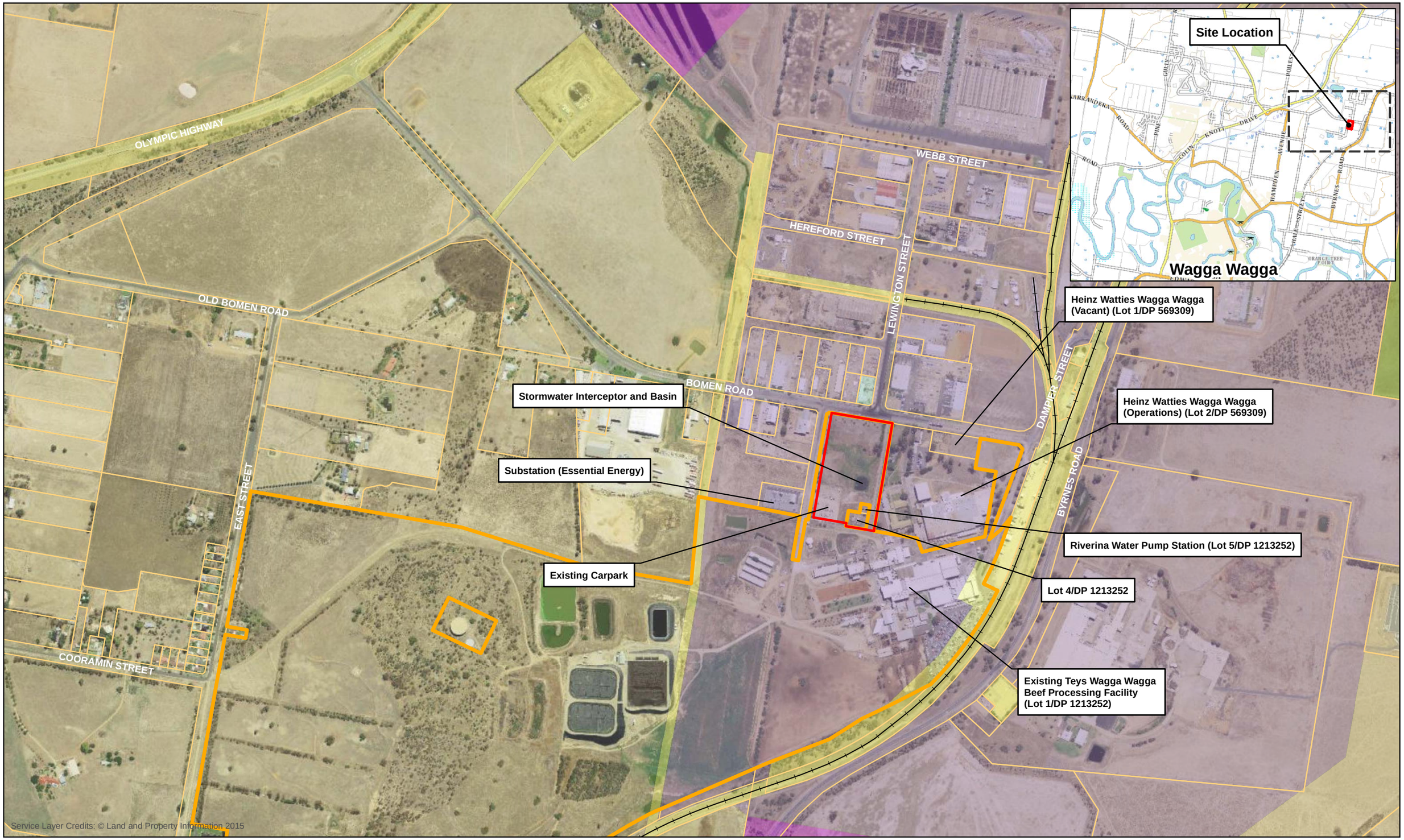
Key features of the Project include:

- Relocating the existing car park located in the south western corner of the project site.
- Relocating the existing stormwater interceptor and basin, including infilling of the existing dam and construction of a new interception pit, detention basin and discharge pipework.
- The potential relocation of a Riverina Water pump station currently located on the project site.
- Construction of an enclosed building to house the facility, including site office/amenities, product receival, storage and processing areas, product storage and dispatch area, service rooms, mezzanine for packaging and truck parking and turning areas.
- Construction of a number of small external workshops and buildings including the refrigeration engine room, waste cardboard storage room, chemical storage and fitters workshop.
- Construction of a car parking area for staff and areas for truck and trailer parking and turning.

It is understood that the Department of Planning and Environment (DP&E) have indicated that the Project would not constitute a modification to the existing Teys Wagga Wagga consent and a new development application (DA) is required in accordance with Part 4 of the *Environmental Planning and Assessment Act, 1979* (EP&A Act).

On the basis that the Project constitutes an *agricultural process industry* with a capital investment value in excess of $30 million, it is therefore defined as State Significant Development (SSD) under Schedule 1, Item 3 of the *State Environmental Planning Policy (State and Regional Development) 2011.* An Environmental Impact Statement (EIS) will need to be prepared as part of the environmental impact assessment to obtain the DA for the Project, for determination by the Minister for Planning.

This document supports an application to the DP&E seeking the Secretary's Environmental Assessment Requirements (SEARs) for the EIS, as part of the process to seek planning approval for the Project.



Paper Size A3

0 75 150 300

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

LEGEND

- Railway
- Site Boundary
- Teys property boundary
- Cadastre

SILEP Land Zoning

- B1, Neighbourhood Centre
- IN1, General Industrial
- IN2, Light Industrial
- RU1, Primary Production
- RE1, Public Recreation
- SP2, Infrastructure

Tays Australia Southern Property Pty Ltd

Relocation of TAFS Operation Preliminary Environmental Assessment

Job Number 23-15864
Revision
Date 08 Sep 2016

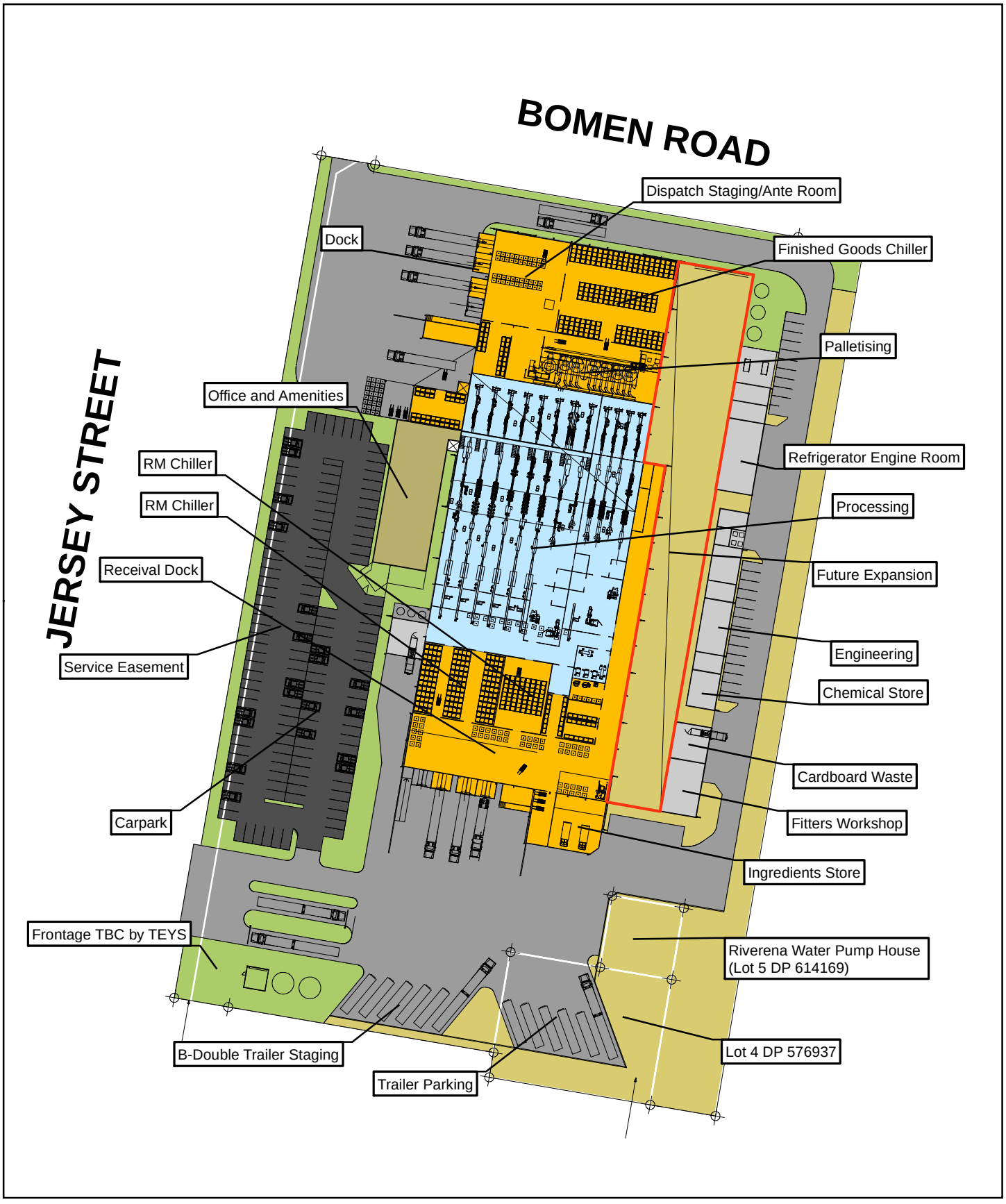
Project Location

Figure 1

G:\23\15864\GIS\Maps\Deliverables\23_15864_Z001_SiteLocality_Landscape.mxd

Data source: Aerial Imagery: Sixmaps 2016 (LPI NSW Government), DCDB Data: LPI NSW Government, DTDB Data: LPI NSW Government. Created by:rtrobinson

Level 15, 133 Castlereagh Street Sydney NSW 2000 **T** 61 2 9239 7100 **F** 61 2 9239 7199 **E** sydmail@ghd.com.au **W** www.ghd.com.au



LEGEND

Area of Future Expansion

Paper Size A4

0 5 10 20 30

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

Tays Australia Southern Property Pty Ltd
Relocation of TAFS Operation Preliminary Environmental Assessment

Job Number 23-15864
Revision B
Date 29 Jul 2016

Overview of the Project

Figure 1.2

Level 15, 133 Castlereagh Street Sydney NSW 2000 **T** 61 2 9239 7100 **F** 61 2 9239 7199 **E** sydmail@ghd.com.au **W** www.ghd.com.au

G:\23\15864\GIS\Maps\Deliverables\23_15864_Z002_StructureLayout_RevB_A4.mxd

Data source: CAD Design: Wiley & Co Pty Ltd. Created by: mking3

1.2 The proponent

The proponent for construction of this Project is Teys Australia Southern Property Pty Ltd (Teys Australia Southern). The Project will be operated by Teys Australia Food Solutions Pty Ltd (TAFS). Teys Australia Southern and TAFS are subsidiary companies of Teys Australia Pty Ltd.

Teys Australia Pty Ltd (Teys Australia) is a vertically integrated company in the Australia beef value chain, and is the second largest beef processor in Australia.

In addition to the Wagga Wagga Beef Processing Facility Teys Australia owns an additional five primary beef processing facilities across Australia; three in Queensland (Beenleigh, Biloela, and Rockhampton), one in South Australia (Naracoorte) and one more in NSW (Tamworth). Teys Australia also owns and operates three feedlot facilities in Australia, used for finishing livestock and preparing them for processing (Condamine (QLD), Charlton (VIC) and Jindalee (NSW)).

1.3 Purpose and structure of this report

This document provides the information required to support the proponent's application in accordance with the requirements of Part 4 of the EP&A Act. It describes the Project and the potential environmental issues, to assist in the preparation of the SEARs for the EIS.

The remainder of this document is structured as follows:

- Section 2 – provides a description of the background to the Project, including a description of the location, land use, zoning and existing environment. The development history for the existing and proposed facility is also provided as is information regarding any consents and/or investigations which have been prepared for the existing and proposed facility.
- Section 3 – provides a description of the Project's key features as well as a brief description of the construction and operation of the Project.
- Section 4 – provides an overview of the statutory framework and approval pathway for the Project.
- Section 5 – provides a preliminary assessment of the environmental aspects associated with the construction and operation of the Project as determined through a preliminary risk assessment, and outlines the proposed scope for the EIS.
- Section 6 – describes the proposed approach to consultation for the Project and the EIS
- Section 7 – provides the conclusion to the document.

The following definitions have been used in this report:

- The 'project site' refers to the area that may be directly impacted by the Project, in which construction activities would occur.
- The 'study area' includes the Project site and surrounding locality. The study area includes the Bomen Business Park and surrounding properties that have the potential to be directly or indirectly impacted by the Project.

2. Background to the Project

2.1 Site context

2.1.1 Location

The Project is located on the corner of Bomen Road and Jersey Street in the suburb of Bomen, approximately five kilometres north east of the centre of Wagga Wagga, in southern NSW. The project site and surrounding industrial properties are located within the Bomen Business Park in the City of Wagga Wagga local government area (LGA).

The project site is predominantly located on land defined as part of Lot 1 DP 1213252 but also includes Lot 4 DP 1213252 and Lot 5 DP 1213252. The location of the site and corresponding title boundaries are shown on Figure 1.1. The total area of the project site, encompassing part of Lot 1, Lot 4 and Lot 5 of DP 1213252 is 35,874 m^2.

2.1.2 Land ownership

The project site is owned by Teys Australia Southern Property Pty Ltd, who also own the existing Teys Wagga Wagga Beef Processing Facility. Both the project site and existing beef processing facility are located on Lot 1 DP 1213252. The Project will be operated by Teys Australia Food Solutions Pty Ltd.

2.1.3 Existing land uses

The project site is currently vacant with the exception of a car park with approximately 150 spaces in the south western corner of the site, the Riverina pump station in the south east of the site and the stormwater interceptor and basin in the centre of the site. An unsealed access track runs along the eastern boundary of the site from an access gate on Bomen Road to the Riverina Water pumping station in the south eastern corner of the site.

The project site is shown on Figure 1.1 and selected photos of the site are included in Appendix A. Land use in the surrounding locality is predominantly industrial.

Land uses adjacent to the project site are as follows:

- North –Bomen Road is located adjacent to the northern boundary, beyond which lies a vacant block and industrial properties including Steel Supplies, Southwest Trailers and ProWay Livestock Equipment. Other industrial premises to the north of the project site include Southern Oil Refining, ACCESS Recycling, the Wagga saleyards, the Bomen Industrial Sewage Treatment Facility (council owned industrial STP) and Riverina Oils & Bio Energy,
- East – Heinz Watties Wagga Wagga is also located directly adjacent to the eastern boundary of the Project site. The Heinz property encompasses Lot 1 and Lot 2 of DP 569309. Lot 2 houses Heinz operations, while Lot 1 is vacant. Dampier Street and the Main Southern Railway are located beyond this.
- South – The existing Teys Wagga Wagga Beef Processing Facility is located to the south of the project site. The facility's primary treatment process and bio-filter system are located directly adjacent to the southern boundary of the project site and wastewater from the treatment process is irrigated on the facility in accordance with Modification 5 to the existing DA consent (DA No. 220-07-2002 – see Section 2.3 for further information) . The Main Southern Railway is located to the south of the Beef Processing Facility.
- West – Jersey Street is located adjacent to the western boundary of the project site. Industrial businesses are located on the opposite side of Jersey Street and include Great

Southern Electrical and a substation operated by Essential Energy while other industrial businesses located beyond this include Rodneys Transport Service and Delta Livestock & Property.

Of those businesses or industries located in the direct vicinity of the site there are a number which currently contribute to noise, traffic and air quality (including odour) in the surrounding environment. These industries include, but are not limited to, the processing of cooked meat at the Heinz Watties Wagga Wagga site, the sale of cattle at the Wagga saleyards, operations at Bomen STP and transport vehicle movements associated with the Main Railway and Rodney's Transport Service.

The nearest residential properties to the project are located in Cartwrights Hill, approximately one kilometre to the west of the site, on either side of East Street.

The nearest large regional urban centre is Wagga Wagga with a population of approximately 63,000. Wagga Wagga constitutes both urban and rural areas however the majority of the population is located in the urban areas. Key employment sectors in Wagga Wagga include public administration and safety, education, health care, retail trade and, to a lesser extent, manufacturing. Wagga Wagga also includes military areas in Kapooka (Army Recruit Training Centre) and Forest Hill (RAAF Base Wagga). In addition to Bomen the other main industrial area in Wagga Wagga is located in east Wagga Wagga.

2.1.4 Land Zoning

Land zoning for the project site and immediate surrounds under the *Wagga Wagga Local Environmental Plan 2010* (Wagga LEP) is shown on Figure 1.1. The land zoning for the project site is IN1 General Industrial.

2.1.5 Topography

The topography of the surrounding terrain is gently undulating, rising from the Murrumbidgee River at Wagga Wagga, which has an elevation of approximately 175 m Australian Height Datum (AHD).

The project site is generally flat, with a fall of approximately five meters from the south east corner to the north west corner of the site. The elevation of the project site is 220 AHD.

2.1.6 Hydrology

The project site is located within the Murrumbidgee catchment which has an area of 84,000 km^2. The Murrumbidgee River, located approximately 4 km south west of the site, generally runs east to west along the northern boundary of urban Wagga Wagga. The Murrumbidgee River has a length of almost 1,600 km, rising in the Monaro Plains and flowing westward to its junction with the Murray river downstream of Balranald.

The project site is located approximately 1.5 km away from flood prone land in accordance with the Wagga Wagga LEP 2010.

Currently the majority of clean stormwater within the project site and the adjacent Beef Processing Facility drains to the stormwater interceptor and basin located in the centre of the project site. Stormwater is then piped to the Council stormwater drainage system to the north, which drains to Dukes Creek, located approximately 1.4 km north west of the site, and ultimately to the Murrumbidgee River.

2.1.7 Climate

The climate of the region is temperate, with hot dry summers and cold winters. Mean daily maximum temperatures range from 12.5 degrees Celsius in July to 31.2 degrees Celsius in January. Wagga Wagga (Department of Primary Industries (Science and Research), 2016).

2.1.8 Biodiversity

The Project site has been historically cleared of native vegetation and is substantially modified. Planted non-locally native trees and shrubs are present along the northern and eastern boundaries. A line of planted introduced Poplar trees (*Populus nigra 'Italica'*) is present along the western side of the access road into the property. These connect to a small patch of locally native trees likely to include planted Yellow Box (*Eucalyptus melliodora*) and River Red Gum (*Eucalyptus camaldulensis*) or Blakely's Red Gum (*Eucalyptus blakelyi*). This patch is unlikely to form the threatened ecological community Box-Gum Woodland due to the small size of the patch and the highly degraded nature of the understorey vegetation. Other planted, non-locally native trees and shrubs dot the project site. Planted non-locally native trees are also present in the road reserve on the western side of the site.

2.1.9 Cultural Heritage Values

A search of the Aboriginal Heritage Information Management System (AHIMS) database (accessed 28 June 2016) for Lot 1 DP 1213252, which encompasses the project site and the existing Beef Processing Facility, revealed there is one artefact located approximately 1.6 km to the south of the site.

An archaeological survey undertaken by HLA-Envirosciences Pty Ltd (HLA-Envirosciences) in 1997 and reported in the Environmental Impact Statement (EIS) for the Beef Processing Facility (HLA-Envirosciences, 2002) identified one isolated artefact (a piece of brown coarse grained silicate) in the south west of the existing facility. The archaeological report concluded that due to the isolated location of this artefact it was likely to have been transported from elsewhere.

A search of the NSW Heritage Register identified two heritage items located within 500 metres of the project site:

- A local heritage item listed under the Wagga LEP - Bomen Stationmaster's Residence (58 Dampier Street Bomen) located 425 m north east of the project site.
- A State heritage item - Bomen Railway Station (46 Dampier Street Bomen) located 400 m north east of the project site.

Both listed items are located a considerable distance from the Project site and will not be impacted by the proposed development.

2.1.10 Air quality

As described in Section 2.1.3 the site is located in an area surrounded by several industrial premises at which activities are undertaken that contribute to the air quality of the area.

The existing Beef Processing Facility has historically had several odour complaints from residents located in proximity to the site. Progressive improvement works have been undertaken at the Beef Processing Facility and resulted in a reduction in odour generation and a decline in odour complaints received between 2003 and 2015.

An audit of the biofilter was recently undertaken by GHD and preliminary observations indicated the biofilter is operating efficiently. The results of the audit, including sampling results, would be provided as part of the EIS.

Operation of the Project would not introduce any new odour generating processes and would be located within an enclosed facility.

2.2 Development history

2.2.1 Overview

The Beef Processing Facility was originally established as an abattoir in the late 1940's. At that stage it was operated by Wagga Wagga City Council and consisted of a general purpose abattoir complex with a collection of buildings, surrounded by hardstand areas and roadways. The Project site has remained vacant since that time.

In 1991 Cargill Inc. purchased the abattoir. Prior to Cargill Inc.'s ownership the site was used as an abattoir for both sheep and cattle. By 2002 existing production at the site consisted of 850 head of cattle per day.

In 2002 Cargill submitted an application for development approval under Part 3A of the Environmental Planning and Assessment Act 1979 (EP&A Act), for expansion of the existing facility. The proposed development involved:

- An increase in load-out facility
- An increase in chiller capacity
- An increase in wastewater treatment capacity
- An increase in freezer capacity
- An increase in product cold storage
- Improvements in odour controls at the facility.

The proposed development was deemed to be designated development, state significant and integrated development under the EP&A Act, hence an EIS was submitted with the application (HLA-Envirosciences, 2002).

In 2011 Teys Australia Southern purchased the site from Cargill Inc. The plant complex and area of land owned by Teys Australia Southern is approximately 155.8 ha. The facilities buildings, including the beef slaughter floor, fabrication room, case ready room, chillers, freezers, carton chillers and rendering plant, are located in the northern area of the existing facility while the water treatment plant, yards, effluent irrigation area and grazing land are located in the south west of the facility.

In 2012, Teys commenced operations at the existing TAFS facility producing retail ready beef products in a refurbished former sheep slaughter room at the processing facility. Original production targets were for 30 tonnes per week of finished product. Currently the existing TAFS facility produces more than 280 tonnes per week of finished products.

2.3 Existing consents

As described in section 2.2.1 a development application for expansion of the existing Beef Processing Facility was submitted in 2002. At the time the Beef Processing Facility was defined as Lots 1, 2 and 4 DP 700113, Lot 1 DP 840624, Lot 6 DP 614169 and Lot 11 DP 814225, Dampier Street Wagga Wagga. Since then the title boundaries have been simplified such that the entire existing facility is incorporated in Lot 1 DP 1213252.

Development consent for the proposed expansion and upgrade was granted on the 27 February 2003 (DA No. 220-07-2002). Since then a number of applications for modification under either Section 75W or Section 95(1) of the EP&A Act have been submitted and approved including:

- Modifications on 3 November 2003 and 31 March 2004 to amend the footprint to allow expansion of the abattoir to the south east and to amend consent conditions regarding soil contamination and remediation (Mod 1 and Mod 2).
- A modification on 29 June 2009 to enable the construction of a new covered anaerobic pond and biogas collection system (Mod 3).
- A modification on 2 August 2010 to upgrade the wastewater treatment system and reduce the kill capacity of the abattoir (Mod 4).
- A modification on 28 September 2011 to permit irrigation of 300 megalitres of effluent per annum (Mod 5).
- A modification on 7 July 2015 to allow for construction of a number of buildings/structures, demolition of some existing structures to enable the warehouse extension, internal refurbishments and formalisation of heavy vehicle access of Dampier street (Mod 6).
- A modification on 13 January 2016 to construct and operate a new bio-filter and demolish the existing bio-filter (Mod 7).

Under the existing integrated consent, DA No. 220-07-2002-I, development consent has been obtained for the following activities at the Teys Wagga Wagga Beef Processing Facility:

- Demolishing some disused buildings.
- Reconstructing and expanding a major portion of the abattoir.
- Installing a bio-filter to capture and treat odour originating from rendering plant.
- Augmenting and refurbishing the existing waste water treatment system.
- Discharging 20% of effluent directly to the sewer system.
- Constructing an access road, internal roads, car parking, security gatehouse and associated infrastructure to service the abattoir.
- Increasing production from 850 to 1,600 head of cattle per day.
- Operating 24 hours a day, seven days a week.

2.4 Need for the Project

The TAFS facility on the existing Beef Processing Facility currently produces more than 280 tonnes per week of finished products, which are purchased by a major Australian grocery retailer under long term agreement. Growth forecasts have indicated production is likely to exceed 750 tonnes per week by 2019 and demand is likely to keep increasing beyond this point, in line with predicted population growth and increasing per capita consumption.

Operational constraints largely associated with the size of TAFS current location mean that demand will exceed supply capabilities by 2018/2019. Therefore, an alternative facility is required to house TAFS operation to enable Teys Australia Southern to meet demand forecast for 2018/2019 and future proof for growth beyond this time.

2.5 Investigations to date

Teys Australia Southern completed a feasibility assessment and concept design report in 2015 (Wiley, 2015) for a new/relocated retail ready meat facility producing up to 1000 tonne per week of raw product over three stages and two site options. The site options included the project site and a brownfield site located approximately three kilometres north of the existing facility, which

already had existing buildings. The feasibility assessment identified the following benefits and constraints associated with construction and operation at the project site:

- Bushfire mapping; the site is located within the Bomen Business Park therefore the potential for bushfire mitigation being required is low.
- The surrounding roads already service B-double traffic (with a major transport depot to the west of the facility).
- The land zoning is IN1 under the Wagga LEP.

The brownfield site presented similar benefits as the project site, due to its location within the North Wagga industrial area. However, key constraints associated with the brownfield site included the potential for contamination due to previous activities at the site. In addition, operation on the brownfield site would have been constrained due to existing building areas, configuration and site levels issues, therefore making it more complex to achieve project requirements. For these reasons the project site was chosen as the preferred location.

Based on potential use of the project site for food production a limited Phase 2 contamination assessment was undertaken on the site in May 2016 (Aitken Rowe Testing Laboratories (ARTL, 2016). The contamination assessment reported concentrations of contaminants of potential concern (COPC) either below the nominated guideline levels or below detection levels and concluded the project site was suitable for commercial/industrial use (refer to Appendix B).

3. The Project

3.1 Overview

This section provides a brief description of the Project, including the infrastructure required, indicative construction activities, and the proposed operation arrangements.

The key characteristics that make up the Project (construction and operation) would continue to be refined and expanded upon following submission of this application. Further developed and updated information would be provided in the EIS.

3.2 Key features of the Project

Key features of the Project are shown on Figure 1.2.

The Project would primarily consist of a building with approximately 12,000 m^2 floor space and the following areas:

- Product receival and storage.
- Processing.
- Product storage and dispatch.
- Office and amenities.
- Service rooms.
- Mezzanine for packaging.
- Truck parking and turning areas.

To support functions within the building a number of small ancillary buildings may also be required including:

- Maintenance workshop facilities including a spare parts store.
- Fire system.
- Storage facilities for dangerous goods and gases including refrigerants such as ammonia, compressed air equipment and carbon dioxide and oxygen storage tanks.
- Refrigeration plant room, electrical switch room and boiler room.
- Waste storage facilities for general solid waste (non-putrescible).

The Project will also include construction/operation of the following:

- A carpark to accommodate up to 280 spaces.
- Trailer parking spaces and loading docks.
- Security guardhouse, fencing and staff entry.
- Replacement of the existing stormwater interceptor and basin located on the project site.

3.2.1 Project design principles

Design of the Project would incorporate the following principles:

- Ability for the new facility to operate independently from the existing Beef Processing Facility (from a business interruption/supply continuity perspective), with the exception of wastewater and stormwater treatment.

- Energy and environmental efficiency consideration in equipment selection and building design.
- Single direction traffic flow, where possible.
- Minimisation of human/vehicle interaction.
- Flexibility of product processing.
- Eliminate/minimise manual handling.
- Business interruption mitigation (e.g. independent power supply to the primary processing facility etc.).
- Future production growth and potential expansion into export products.

3.3 Construction of the Project

Construction of the Project would involve the following key activities:

- Site establishment, including establishment of an alternative access entry driveway and gate in the south western corner of the site, from Jersey Street.
- Demolition of the existing carpark and stormwater interceptor and basin, including infilling of the detention basin.
- Relocation of the Riverina Water pumping station, or retention, depending on detailed design.
- Clearing of vegetation across the site.
- Cut and fill across the Project site.
- Construction of the Project elements as described in section 3.2.
- Site demobilisation and reinstatement.

Construction is proposed to commence in late 2017/early 2018 and will take approximately 18 to 24 months to complete, which includes internal fit out and process equipment commissioning.

3.4 Operation of the Project

Operation of the Project will produce approximately 1,100 tonnes and 250,000 trays per week of retail ready raw meat including:

- Portioned steak
- Mince.
- Beef stir fry.
- Diced beef.
- Marinate roast products.
- Burgers.
- Meatballs.
- Value added steaks.
- Primal portions (whole muscle meat cuts).
- Corned beef and sausages (proposed in the future).

Operation of the TAFS facility involves the following key steps:

- Raw material in the form of one tonne bins of trim or boxed beef (cryovac packaged product) of primal cuts on pallets will be transported to the site in refrigerated trucks (single trailers and B-doubles) from either the existing Beef Processing Facility or other facilities around Australia.
- The raw material will be de-boxed and de-bagged (all activity occurs within fully enclosed and refrigerated areas).
- The meat will be portioned, processed and packaged as required, depending on the meat product, utilising a number of processing lines. Where marinades or other additions are required these will be provided pre-batched and will be added to each blend in 200 litre bins.
- Packages will be weighed, labelled and packed into either cartons or plastic crates which again will be weighed and labelled prior to palletising.
- All product groups will be consolidated in one area and palletised. Pallets will be dispatched to the finished goods store prior to dispatch. Pallets will then be transported to a dispatch area for loading onto trucks.
- The processing area will be cleaned and the facility washed down between shifts.

3.4.1 Waste products

The following waste products will be generated during operation of the facility:

- Cardboard waste from packaging, which will be sent to recyclers.
- Plastic waste from the cryovac bags. As this contains polyvinyl chloride (PVC) and cannot be recycled, this will be sent to landfill, as will any dry ingredient waste. The volume of waste sent to landfill is predicted to be less than 400 kilograms per day.
- Wastewater generated from wash down during the cleaning shift. This will be collected in drains in the floor and piped underground to the existing wastewater treatment system at Teys' adjacent Beef Processing Facility. The estimated volume of wastewater generated will be up to 0.2 mega litres per day. The wastewater treatment system is capable of processing 5.5 mega litres per day, seven days per week. Additional volume can be accommodated in the existing system
- A small amount of meat or fat waste (one to two tonnes per day), which will be sent to the rendering facility at Teys' adjacent Beef Processing Facility. The existing rendering facility is capable of processing in excess of 300 tonnes per day and receives this same type of material from the existing abattoir complex.

3.4.2 Other

Operation of the TAFS facility will result in an additional 60 truck movements per week. Access to the site will be from Jersey Street via a manned security gate located in the south western corner of the site.

Operation of the facility will require the addition of around 150 full time equivalent employees at full production capacity, with potential for further future expansion.

The facility will operate on a six-day operating week and the production rate will typically be achieved via an eight to ten hour operating shift. Generally, there will be one production shift per day, starting at approximately 6 am, however this may increase to two shifts where demand requires.

Typically truck load out will commence in the early afternoon and finish at 10 pm, however, again where demand requires, truck loading and unloading could run for 24 hours.

3.5 Capital investment cost

The capital investment value of the Project is estimated to be approximately $50 million for construction and an additional $20 million for plant and equipment.

4. Permissibility and strategic planning

4.1 Introduction

This section sets out the key planning and environmental regulatory framework applicable to the Project, including the identification of relevant strategic planning documents, environmental planning instruments and key development standards. Both NSW and Commonwealth and NSW legislation are identified and will be further considered in the EIS.

4.2 Commonwealth Legislation

4.2.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the Australian Government's central piece of environmental legislation that provides a legal framework to protect and manage environmental values considered to be of national environmental significance.

The EPBC Act requires approval from the Commonwealth Minister for the Environment for actions that may have a significant impact on listed matters of national environmental significance (MNES).

The Project is considered an "action" which is broadly defined under the EPBC Act to include a project, development, undertaking, activity or series of activities. It is the responsibility of the applicant proposing to undertake an action to initially consider whether the project is likely to have a significant impact on any MNES. If the applicant considers there is potential for significant impacts upon any matters protected under the EPBC Act, then a referral is required to be submitted to the Minister for the Environment. Developments considered likely to result in significant impacts are defined as "controlled actions" and require assessment and approval under the EPBC Act.

An EPBC protected matters search was undertaken on 28 June 2016 and identified the following MNES within one kilometre of the project site:

- Three listed threatened ecological communities.
- 15 listed threatened fauna species.
- Five listed migratory species.

However, based on the existing condition of the project site and the nature of the works proposed the Project is considered unlikely to have a significant impact on any MNES.

Consideration of potential impacts upon listed threatened species and communities and any other MNES potentially impacted by the Project will be undertaken in more detail as part of the EIS. A referral will be submitted to the Minister for the Environment if any unexpected impacts are identified through the EIS assessment process, which potentially constitute a controlled action.

4.3 New South Wales Legislation

4.3.1 Environmental Planning and Assessment Act 1979

Approval Pathway

The Minister for Planning (or his or her delegate, such as the NSW Planning Assessment Commission) determines development applications for State significant development under Part 4 of the EP&A Act.

Under section 89C of the EP&A Act, development will be 'State significant development' if it is declared to be such by the State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP). Clause 8(1) of the SRD SEPP provides:

8 Declaration of State significant development: section 89C

(1) Development is declared to be State significant development for the purposes of the Act if:

(a) the development on the land concerned is, by the operation of an environmental planning instrument, not permissible without development consent under Part 4 of the Act, and

(b) the development is specified in Schedule 1 or 2.

The Project is 'State significant development' under clause 8(1) of the SRD SEPP as it is:

- not permissible without development consent on the land on which the project will be carried out; and
- development that is specified in Schedule 1 to the SRD SEPP.

As described in section 4.4.1 the proposed TAFS facility is permitted with consent under the Wagga LEP.

As described in Section 4.4.2, the Project is State significant development as defined under Clause 3 of Schedule 1 because it is development for an agricultural produce industry (3a – meat packing) and has a capital investment value of over $30 million.

Application of other provisions of the EP&A Act to the Project

Section 89J of the EP&A Act provides that the following authorisations are not required for projects which have been granted State significant development:

- the concurrence of the Minister administering Part 3 of the *Coastal Protection Act 1979*;
- a permit under sections 201, 205 or 219 of the *Fisheries Management Act 1994*;
- an approval under Part 4, or an excavation permit under section 139, of the *Heritage Act 1977*;
- an Aboriginal heritage impact permit under the *National Parks and Wildlife Act 1974*;
- an authorisation under section 12 of the *Native Vegetation Act 2003*;
- a bush fire safety authority under section 100B of the *Rural Fires Act 1997*; and
- a water use approval under section 89, a water management work approval under section 90 or an activity approval (other than an aquifer interference approval) under section 91 of the *Water Management Act 2000.*

Section 89K of the EP&A Act provides that the following authorisations cannot be refused if they are necessary for the carrying out of a project which has been granted State significant

development consent, and that the authorisations granted must be substantially consistent with the project's State significant development consent:

- an aquaculture permit under section 144 of the *Fisheries Management Act 1994*;
- an approval under section 15 of the *Mine Subsidence Compensation Act 1961*;
- a mining lease under the *Mining Act 1992*;
- a production lease under the *Petroleum (Onshore) Act 1991*;
- an environment protection licence under the *Protection of the Environment Operations Act 1997*;
- a consent under section 138 of the *Roads Act 1993*; and
- a licence under the *Pipelines Act 1967.*

4.3.2 Other NSW Legislation

The Project may require approvals under one or more other NSW legislation. This will be considered and addressed in the EIS. A summary of potentially relevant legislation is included in Table 4.1.

Table 4.1 Summary of NSW legislation relevant to the Project

Legislation	Relevance to the Project
Protection of the Environment Operations Act 1997	The *Protection of the Environment Operations Act 1997* (POEO Act) is administered by the Environment Protection Authority (EPA). The POEO Act regulates and requires licensing for environmental protection, including for waste generation and disposal, and for water, air, land and noise pollution. Under the POEO Act, an EPL is required for premises at which a 'scheduled activity' is conducted. Schedule 1 of the POEO Act lists activities that are scheduled activities for the purposes of the Act. An EPL is currently held for the existing Beef Processing Facility (EPL # 2262). The EPL includes a number of requirements for ongoing monitoring and/or reporting associated with odour, water management, effluent wastewater, noise and waste management. A variation to the EPL to include the Project, was submitted to the EPA on 5 April 2016 and subsequently approved. The EPL variation (#2262 dated 12 August 2016) is provided in Appendix C. While the activities which will be undertaken at the project site are unlikely to cause significant odour and wastewater constraints, the detailed design and EIS will include mitigation measures to manage potential discharges to air, land and water in accordance with the POEO Act.
Contaminated Land Management Act 1997	The *Contaminated Land Management Act 1997* (CLM Act) enables the Office of Environment and Heritage (OEH) to respond to contamination that is causing a significant risk of harm to human health or the environment, and sets out criteria for determining whether such a risk exists. NSW OEH can request clean-up from the present land occupier. CLM Act requires notification to OEH of a new contamination discovery. Any future changes in land use at a site must also consider the requirements of the CLM Act, including whether the site is determined to be significantly contaminated land, and therefore if investigation or remediation works are required by the EPA to facilitate the change of land use. There is the potential for contamination to be present at the project site as potentially contaminating activities have been, or are being undertaken at the adjacent Beef Processing Facility. However, as

	discussed in Section 2.5 a contamination assessment has been recently carried out and concluded the site was suitable for commercial/industrial use.
National Parks and Wildlife Act 1974	The *National Parks and Wildlife Act 1974* (NPW Act) is administered by the OEH and provides for the establishment, care, control, and management of National Parks, historic sites, nature reserves, State conservation areas, Aboriginal areas, and State game reserves. The potential for impacts upon Aboriginal cultural heritage has been evaluated and as detailed in section 2.1.9 there are no currently known constraints in relation to Aboriginal Cultural Heritage. . If any unexpected constraints are identified during preparation of the EIS, an Aboriginal Heritage Impact Permit will not be required for the project if development consent is granted, due to the application of Section 89J of the EP&A Act.
Heritage Act 1977	The purpose of the *Heritage Act 1977* (Heritage Act) is to protect and conserve non-indigenous cultural heritage, including listed heritage items, sites, and relics. The EIS will assess non-indigenous cultural heritage however, as detailed in section 2.1.9 there are no currently known constraints in relation to non- indigenous heritage items. If any unexpected constraints are identified during the EIS approval under Part 4 of the Heritage Act will not be needed for the Project if development consent is granted due to the application of Section 89J of the EP&A Act.
Threatened Species Conservation Act 1995	The *Threatened Species Conservation Act 1995* (TSC Act) provides for the conservation of threatened species, populations, and ecological communities of animals and plants. As detailed in section 2.1.8 the potential for impacts to threatened flora/fauna and ecological communities is considered unlikely given the current condition of the site..
Waste Avoidance and Resource Recovery Act 2001	The *Waste Avoidance and Resource Recovery Act 2001* (WARR Act) aims to ensure that the waste management hierarchy informs waste management, i.e., avoidance, recovery (including reuse, reprocessing, recycling and energy recovery) and finally, disposal. The WARR Act also aims to encourage overall waste minimisation and efficient use of natural resources. As discussed in section 3.4.1 waste generation from operation of the facility will be minimal. The EIS will further assess potential waste streams likely to be generated during construction and operation of the facility taking into consideration the waste management hierarchy principles and potential waste licensing requirements under the WARR Act.

4.4 Environmental Planning Instruments

4.4.1 Wagga Wagga Local Environmental Plan 2010

The Wagga LEP provides local environmental planning provisions for land in the Wagga LGA in accordance with the standard environmental planning instrument under section 33A of the EP&A Act.

The Project will be located within the IN1 General Industrial land zone under the Wagga LEP, as shown on Figure 1.1.

The Project is permitted with consent under Zone IN1 General Industrial.

4.4.2 State Environmental Planning Policy (State and Regional Development)

State Environmental Planning Policy (State and Regional Development) 2011 (State and Regional Development SEPP) identifies development that is considered to be of state significance.

Development is declared to be state significant if it is not permissible without consent (i.e. it is permissible with consent) and is specified in schedule 1 or 2 of the State and Regional Development SEPP.

Clause 3 in Schedule 1 to the SRD SEPP specifies the following development:

> ***3 Agricultural produce industries and food and beverage processing***
>
> *Development that has a capital investment value of more than $30 million for any of the following purposes:*
>
> *(a)abattoirs or meat packing, boning or products plants, milk or butter factories, fish packing, processing, canning or marketing facilities, animal or pet feed production, gelatine plants, tanneries, wool scouring or topping or rendering plants,*
>
> *(b)cotton gins, cotton seed mills, sugar mills, sugar refineries, grain mills or silo complexes, edible or essential oils processing, breweries, distilleries, ethanol plants, soft drink manufacture, fruit juice works, canning or bottling works, bakeries, small goods manufacture, cereal processing, margarine manufacturing or wineries,*
>
> *(c)organic fertiliser plants or composting facilities or works.*

The Project is State significant development as defined under Clause 3(a) of Schedule 1 because it is development for the agricultural produce industry of meat packing and has a capital investment value of over $30 million.

4.4.3 State and Environmental Planning Policy No 33 – Hazardous and Offensive Development

The State and Environmental Planning Policy No 33 – Hazardous and Offensive Development (SEPP33) requires the consent authority to consider particular matters in determining a development application for a Project that is a potentially hazardous industry or potentially offensive industry.

The Project involves food processing and ammonia may potentially be used and stored on the Project site as a refrigerant during operation. This is considered as an industry that may be potentially hazardous.

A preliminary risk screening will be undertaken for the Project in accordance with SEPP 33 for inclusion in the EIS. A Preliminary Hazard Analysis will be prepared for the Project for inclusion in the EIS if it is determined to be a potentially hazardous industry, as that expression is defined in SEPP 33.

5. Key environmental issues

5.1 Identification

The key project-related issues warranting detailed assessment in the EIS will be identified through:

- A review of the existing environmental context and surrounding locality.
- The legislative framework applicable to the Project.
- The preliminary environmental risk screening undertaken as a part of this PEA.
- The outcomes of consultation to be undertaken with government agencies and other relevant stakeholders, including requirements obtained through the SEARs.
- Specialist studies completed as part of the preparation of the EIS.

The outcomes of the preliminary environmental risk screening, including the issues identified for further detailed assessment in the EIS, are discussed in Section 5.3. These issues will form the basis of the EIS, subject to the outcomes of consultation with government agencies, including the SEARs, as well as outcomes of the specialist assessments as they progress.

5.2 Environmental risk analysis

A preliminary environmental risk screening was undertaken to identify potential environmental impacts that may arise as a result of the Project.

The preliminary environmental risk screening was undertaken in the form of a preliminary, desktop-level risk assessment, to broadly assess the potential environmental risks that may arise as a result of the construction and operation of the facility to identify key areas for the assessment.

The environmental risk analysis for the project involved:

- Identifying environmental aspects
- Identifying the source of potential risks associated with each of these aspects
- Identifying the potential impact associated with each risk
- Identifying priority issues for the EIS.

Potential impacts were assigned a rating of low, moderate or high, based on the level of risk associated with each environmental aspect. This will enable the identification of priority assessments for the EIS to focus on aspects of the Project that have the potential to:

- Cause the greatest environmental impact.
- Affect the most sensitive aspects of the environment.
- Be of the greatest interest or concern to the community.

In general, the following was applied when scoping requirements for the environmental assessment:

- **High risk** – Have the potential to cause medium to long term (6 to 12 months) environmental damage which is potentially irreversible. Alternatively, community perception is that this impact is likely to be a significant issue that could cause either long-term impacts

or severe disruptions to the community. Detailed specialist investigation and assessment is necessary to enable identification of appropriate management and mitigation options and/or to alleviate community concerns.

- **Moderate risk** –Have the potential to cause short to medium-term (1 to 6 months) environmental damage which is reversible and/or the impacts are well contained. Perception is that this impact could cause moderate disruptions or impacts to the community. Further investigation as part of the environmental assessment is desirable, to address some uncertainties. Impacts could be mitigated through the application of relatively standard environmental mitigation measures.
- **Low risk** –Are likely to be short-term and readily reversible (insignificant) causing no appreciable changes to the environment and negligible impacts to the community. Only broad or desktop investigation is necessary. Impacts could be mitigated through other working controls (such as detailed design requirements, normal working practice, safety and quality controls).

Table 5.1 provides the environmental risk analysis for the Project, it includes:

- A summary of the key potential source of risk and environmental impacts
- Consideration of the risk ranking based on the likelihood and significance of the impact
- A discussion regarding the findings of the preliminary risk screening and consideration of the priority for future assessment.

Table 5.1 Preliminary environmental risk screening results

Environmental aspect	Source of risk	Potential impact	Risk ranking	Priority for assessment	Discussion
Air Quality and Odour	Dust during construction	Impact upon any sensitive receivers in proximity to the site	Low	Low	The project site is located in an industrial area and the nearest residential receivers are over 1 km away. Given this, the potential for dust impacts to sensitive receivers during construction is considered to be low. Consideration of impacts to receivers as a result of dust from construction will be undertaken as part of the EIS
	Odour during operation	Impact upon any sensitive receivers in proximity to the Project.	Low	Moderate	Operation of the facility will not introduce any new odour generating processes and will be located within an enclosed facility. Despite the operations at the facility site being unlikely to result in significant odour generation, community perception is likely to see operations at the TAFS facility as being similar to those at the Beef Processing Facility as discussed in Section 2.10.10. Given this, an air quality impact assessment will be included as part of the EIS.
	Energy usage including refrigeration system	Greenhouse emissions	Low	Low	In accordance with the design principles provided in section 3.2.1 the facility will be designed to maximise energy efficiency during operation. Consideration of any greenhouse gas emissions during the operation of the facility will be undertaken as part of the EIS.
Traffic and access	Disruption to local road network during construction	Potential disruption to local road users	Low	Low	Construction activities are not anticipated to result in significant traffic generation or impact upon local road users. No off-site infrastructure works are required to enable construction access, with the exception of construction of a driveway to allow access to the project site from the south western corner. Temporary impacts during construction will be considered with reference to existing traffic management plans and access protocols for the adjacent Beef Processing Facility. The EIS will also include consideration and justification of the access locations which will be used during construction and operation.

Environmental aspect	Source of risk	Potential impact	Risk ranking	Priority for assessment	Discussion
	Additional vehicles for operation of the Project	Impact upon the capacity or safety of the existing road network	Moderate	Moderate	The Project would generate approximately 60 additional truck movements per week. Car parking spaces would also be provided for 280 spaces. Based on a traffic impact assessment undertaken for the existing Beef Processing Facility in 2015 (GTA Consultants, 2015), approximately 190 vehicle movements were registered at the western gatehouse over a period of a week. Therefore, operation of the Project would result in an approximate 30% increase in trucks turning into Jersey Street. A traffic impact assessment will be included as part of the EIS which will outline details of key transport routes, traffic types and volumes likely to be generated, and assess impacts on road safety and the capacity of the road network.
Water management	Discharge of wastewater during operation	Altered receiving water quality chemistry Impacts upon any users of the Murrumbidgee River	Moderate	Moderate	As discussed in section 3.4.1 cleaning of the processing facility will generate waste water which will be captured and piped to the existing wastewater treatment facility. The EIS will include a detailed written and graphical description of the proposed wastewater capture system, including contingency measures in the case of spillage or overflow (where relevant to the project site).
	Stormwater runoff and flooding during construction and operation, particularly once the existing stormwater interceptor and basin are removed from the project site	Erosion and sediment laden run-off during construction, resulting in impacts to water quality. Increased runoff leading to flooding of the project site and adjacent Beef Processing Facility	Moderate	Moderate	Construction of the TAFS facility will include replacement of the existing stormwater interceptor and basin to facilitate construction of the proposed facility. The EIS will include a qualitative assessment of the potential for runoff and erosion during construction and management measures will be proposed in accordance with *Managing urban stormwater: soils and construction* (the Blue Book). The EIS will include a detailed written and graphical description of the proposed stormwater management system.
Noise	Noise generated during construction	Impact upon any sensitive receivers in proximity to the Project	Low	Low	The Project is located in an industrial area. The potential for construction noise to impact upon any sensitive receivers will be considered qualitatively in the EIS in accordance with the Interim Construction Noise Guideline (ICNG).

Environmental aspect	Source of risk	Potential impact	Risk ranking	Priority for assessment	Discussion
	Operational noise	Disturbance to sensitive receivers from operation	Low	Moderate	The Project is not considered likely to be a significant noise source as the majority of operation will be located within an enclosed building. Truck movement, loading and unloading operations have the potential to result in noise disturbance particularly if undertaken during night time hours, however the potential for impact is still considered to be low based on the Project's location within an industrial area and distance to the nearest sensitive receptors. Currently truck loading and unloading is undertaken over a 24-hour period at the existing Beef Processing Facility and no community complaints have been received to date regarding noise issues associated with the existing facility. The TAFS facility will be designed to minimise noise impacts during operation, taking into consideration vehicle movements and access. An assessment will be undertaken of potential operational noise as part of the EIS, taking into consideration previous investigations at the existing Beef Processing Facility, including noise and traffic assessments and the NSW EPA Industrial Noise Policy requirements (EPA, 2000).
Waste	Waste meat disposal	Incorrect management resulting in odour	Low	Low	Waste meat will be disposed of at the adjacent Beef Processing Facility in the rendering plant. Management of waste meat will be considered with reference to existing waste management plans and procedures within the adjacent Beef Processing Facility
	Packaging disposal	Recyclable and non-recyclable wastes not being properly segregated, resulting in an increase of material disposed to landfill	Low	Low	As discussed in section 3.4.1 the Project will result in several waste streams, which will be managed in accordance with relevant regulatory requirements. The Project will be designed to optimise waste segregation and reuse opportunities. The EIS will include details of the quantities and classification of wastes likely to be generated during construction and operation, including details on waste storage, handling and disposal, as well as consideration of the waste hierarchy.

Environmental aspect	Source of risk	Potential impact	Risk ranking	Priority for assessment	Discussion
Hazard and risk	Storage of ammonia or other dangerous goods	Leaks and spills resulting in discharges	Moderate	Moderate	The facility will be designed taking into consideration potential impacts associated with storage of dangerous goods. The EIS will include details regarding the proposed dangerous goods that will be used during operation, including volumes, type and potential storage requirements.
Biodiversity	Clearing required for construction	Clearance of native vegetation, loss of habitat, degradation of landscape Impacts upon threatened species and communities	Low	Low	As described in section 2.1.8 the site is largely cleared and is highly modified. Based on the condition and location of the site and the proposed works the Project is unlikely to cause significant impact to biodiversity values. A site visit will be undertaken as part of the EIS to confirm the potential for threatened flora, fauna and habitat to exist in or near the project site.
Soil	Potential soil contamination from adjacent facility's activities	Health and safety impacts to construction and facility workers Mobilisation of contaminants via runoff and/or leaching	Low	Low	A limited Phase 2 contamination assessment has been undertaken on the project site (see section 2.5). The results indicated the site is suitable for commercial/industrial use. The Phase 2 assessment report is provided in Appendix B.
Aboriginal Heritage	Disturbance required for construction of the Project	Impacts upon Aboriginal artefacts or cultural heritage values	Low	Low	The majority of the site has been extensively disturbed and modified for construction of the stormwater interceptor and basin, Riverina Water pumping station and the car park in the south west. The results of an AHIMS search undertaken in June 2016 did not identify sites of Aboriginal heritage at the site (refer to section 2.1.9). A due diligence assessment of potential impacts to Aboriginal artefacts or cultural heritage values will be undertaken as part of the EIS using the existing archaeological survey information from the EIS conducted by HLA-Envirosciences (2002) as applicable (refer to section 2.1.9). No further specialist Aboriginal heritage investigations are proposed to be undertaken as part of the EIS.

Environmental aspect	Source of risk	Potential impact	Risk ranking	Priority for assessment	Discussion
Historic Heritage	Disturbance required for construction of the Project	Impacts upon any listed items in the vicinity	Low	Low	The Project is not expected to result in any impacts to historic heritage. A review of known heritage in proximity to the Project site will be included as a part of the EIS. No further specialist heritage investigations are proposed to be undertaken as part of the EIS.
Social and economic	Construction and operation of the Project	Local and regional benefits	Low	Low	The EIS will consider social and economic benefits of the facility in terms of providing long term employment sustainability for the area.
Food safety	Operation of the Project	Contamination of food due to improper meat handling and processing	Low	Low	The EIS will include a detailed written and graphical description of operation of the Project, including proposed quality control measures and cleaning requirements.
Bushfire risk	Storage of dangerous goods	Injury and damage to health and the environment due to fire	Low	Low	Based on the Project's location in an industrial area with minimal vegetation the potential for bushfire is considered low. The EIS will include consideration of impacts on any bushfire prone land, where present.
Visual amenity	Visibility of the Project	Impacts to the visual amenity of the surrounding area.	Low	Low	Based on the Project's location within an industrial area the EIS is proposed to include a high level consideration of the likely visual impacts.

5.3 Priority assessments for the EIS

5.3.1 Overview

Based upon the results of the preliminary environmental analysis and the environmental risk attributed to impacts associated with each environmental aspect, the following broad priority of assessment ratings were assigned for each environmental aspect.

- High – none.
- Moderate – air quality (odour - based on community perception rather than actual risk), traffic and access, hazard and risk and water management (flooding, stormwater and waste water) and noise.
- Low – greenhouse gas emissions, waste, biodiversity, soils, Aboriginal heritage, historic heritage, food safety. socio-economic, bushfire risk and visual amenity.

The detailed scope of these assessments will be considered following the receipt of the SEARs for the Project.

An EIS will be prepared, based upon contemporary government guidelines and in accordance with the SEARs issued for the Project.

6. Stakeholder consultation

A stakeholder engagement plan will be developed for the Project. It will provide a framework to identify and appropriately consult with stakeholders that may be influenced by or have an interest in the Project. Key stakeholders include:

- Local industry, particularly owners/operators of businesses within the Bomen Business Park.
- Community, particularly the residents of Cartwrights Hill.
- The existing Beef Processing Facility staff and employees
- Government (State and Local).

7. Conclusion and Project justification

The Project is required as the capacity of the existing TAFS operation at the adjacent Beef Processing Facility will be unable to meet future forecast growth by 2018/2019. The processing of retail ready raw beef products (the focus of this SEARs application) has been occurring at the existing Beef Processing Facility since 2012.

The proposed relocation and expansion of the TAFS facility will be undertaken on a site adjacent to the existing Beef Processing Facility, within the same title boundary. Minimal off-site works are proposed.

Operation of the TAFS facility will be within an enclosed building in the Bomen Business Park.

The Project is permissible with consent and is considered state significant development in accordance with Schedule 1 of the SRD SEPP. An EIS will be prepared to accompany the DA for the Project and will consider all potential impacts associated with the construction and operation of the Project.

This PEA has been prepared to provide an overview of the Project and enable the DP&E to issue the SEARs for the preparation of the EIS.

8. References

Aitken Rowe Testing Laboratories Pty Ltd (ARTL) (2016), Limited Phase 2 Investigation Teys Australia, 1 Dampier Street, Bomen, NSW, July 2016.

Department of Primary Industries (Science and Research) (2016), *Climate of Wagga Wagga Agricultural Institute*, http://www.dpi.nsw.gov.au/content/research/centres/wagga/climate Accessed 5 July 2016.

HLA-Envirosciences (2002), *Environmental Impact Statement. Bomen Abattoir Expansion Project.* Prepared for Cargill Foods Australia.

City of Wagga Wagga, 2016, *Wagga Wagga Intramaps*, https://maps.wagga.nsw.gov.au/intramaps80/default.htm?project=WaggaEx&module=Flooding%20Map Accessed 22 July 2016

Wiley (2015), TAFS Wagga Relocation Phase 1 Feasibility Assessment and Concept Design. 15 December 2015

Appendices

Appendix A – Site photographs

Photograph 1 – View of the site from the existing Beef Processing Facility

Photograph 2 – View of the site from the existing Beef Processing Facility showing the Riverina Water pump station and stormwater basin beyond

Photograph 3 – View along the unsealed access track looking north towards Bomen Road

Photograph 4 – View from the north east looking south west

Appendix B – Phase 2 contamination assessment

AITKEN ROWE TESTING LABORATORIES PTY LTD

LIMITED PHASE 2 INVESTIGATION

TEYS AUSTRALIA

1 DAMPIER STREET, BOMEN, NSW

S16-195A
JULY 2016

TABLE OF CONTENTS

1 INTRODUCTION AND OBJECTIVES

This report presents the findings of a limited Phase 2 Environmental Site Assessment (Phase 2) performed at 1 Dampier Street, Bomen, NSW (the site). TEYS Australia (TEYS) commissioned the report in response to Aitken Rowe Testing Laboratories (ARTL) quotation (ARTL ref: Q16-119) dated 30th March 2016.

It is understood that TEYS are proposing to construct a processing/packaging plant at the site and it is the purpose of this investigation to allow a more informative approach as part of the development process.

2 SITE DESCRIPTION

The site is located within the industrial suburb of Bomen approximately 7km north east of the central business district of Wagga Wagga (Figure 1). Table 1 provides a summary of the Site identification.

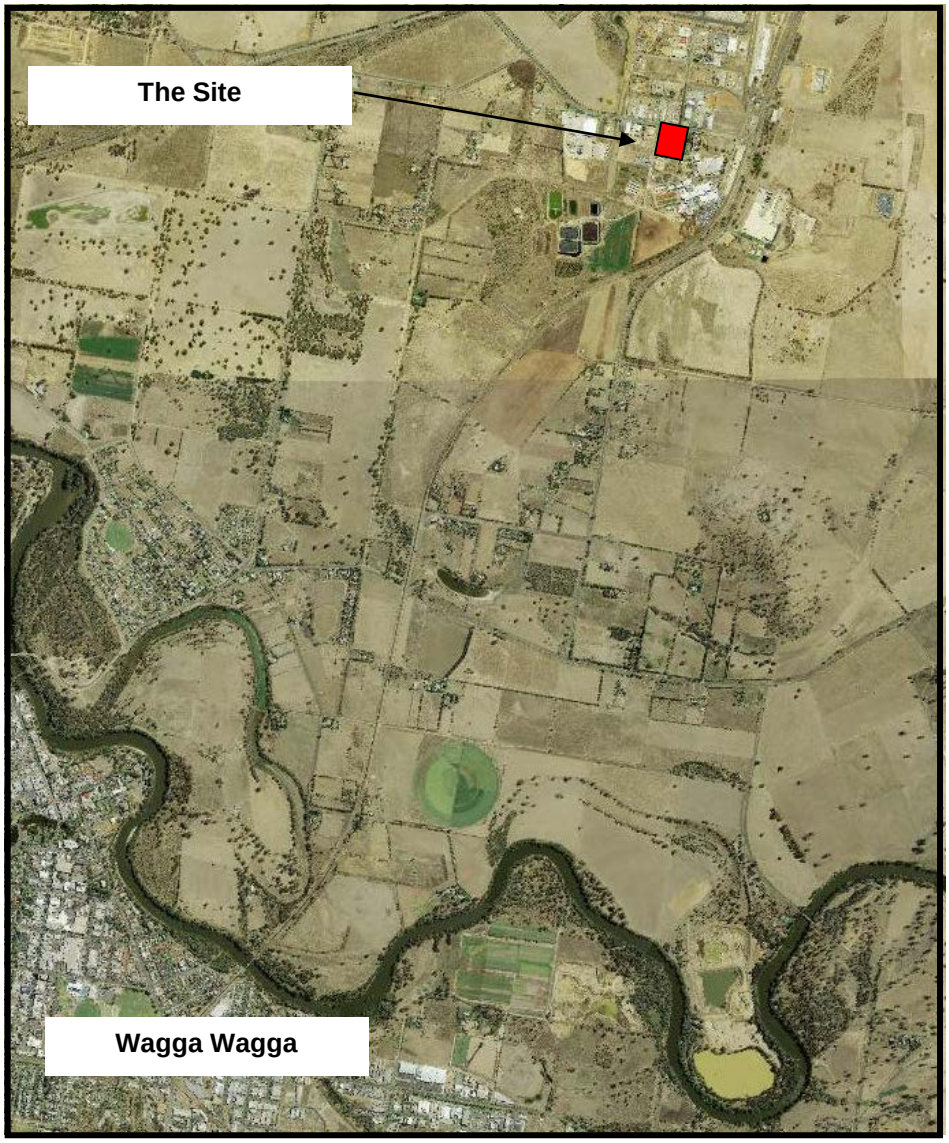


Figure 1: Aerial photograph of the site and the surrounding land (© Department of Lands 2016).

Table 1. Site Identification Summary

Site Address	1 Dampier Street, Bomen, NSW
Site Title Identification Details	Lot 1 in DP 1213252
Current Site Use	IN1 General Industrial
Proposed Site Use	IN1 General Industrial
Local Government Authority	Wagga Wagga City Council

The site forms part of Teys (Australia) meat processing plant and is predominantly vacant. A vehicular parking area is located in the south west corner. A passive water treatment system consisting of a triple interceptor and sediment dam is also at the site. An electrical substation was located toward the southern boundary which was demolished and removed approximately 5 years ago. A pump station remains to the south of the triple interceptor. The site has a downward slope from south to north at approximately 1V:20H and is predominantly covered with grasses/weeds and scattered trees along the northern boundary as noted at the time of the investigation.

It is understood that the proposed works will include a cut of up to 3.0m to the south and fill to the north of the site. It also includes backfilling of the existing sediment dam.

The contamination assessment has been completed in conjunction with the geotechnical investigation at the site. It should be noted that 24 boreholes were planned to be excavated, however due to lack of access following extended rain events, 20 boreholes only were completed.

3 SCOPE OF WORK

The scope of work undertaken by ARTL to meet the objectives comprised the following:

- Detailed site inspection and investigation including
- Power augering at 20 locations to depths of between 4.5m and 6.0m.
- Collection of 40 discrete soil samples from the boreholes for analysis.
- Assessment of data collected during the investigation and analysis results.
- The completion of a formal report presenting results and conclusions.

3.1 VALIDATION SAMPLING AND ANALYSIS CRITERIA

The validation work included collecting soil samples for laboratory testing at various depths from the boreholes to assess if the previous site use had

adversely impacted the underlying materials at the Site. The soil samples were tested for TPH, BTEX, PAH, OCP's, OPP's, PCB's, metals and asbestos.

Validation analysis criteria will be based upon the following:

Health Investigation Levels (HIL), Health Screening Levels (HSL), Ecological Investigation Levels (EIL) and Ecological Screening Levels (ESL) presented in the National Environment Protection Council's (NEPC) National Environment Protection Measure (NEPM amended 2013).

NEPM (2013) present HIL's, HSL's, ESL's and EIL's for different land uses including Industrial/commercial, residential with minimal access to soil, residential with accessible soil, recreational etc.

The Site use will remain zoned as IN1 – General Industrial; therefore Commercial/Industrial will be adopted for remediation for respective contaminants of concern. The proposed soil validation criteria are summarised in Table 2.

Table 2. Soil Remediation Criteria

Analyte	***Health Investigation Levels (mg/kg) HIL-D***
C_6-C_{10}	700
>C_{10}-C_{16}	1000
>C_{16}-C_{34}	3500
> C_{34}-C_{40}	10 000
Benzene	75
Toluene	135
Ethylbenzene	165
Xylenes	180
Arsenic, As	3000
Cadmium, Cd	900
Chromium (Total), Cr	3600
Copper, Cu	240 000
Lead, Pb	1500
Mercury, Hg	730
Nickel, Ni	6000
Zinc, Zn	400 000
Aldrin + Dieldrin	45
Chlordane	530
DDT + DDD + DDE	3600
Heptachlor	50
Total PAH's	4000
Polychlorinated Byphenols	7
Asbestos	Nil*

***A nil detection limit has been adopted for asbestos for this investigation.*

3.2 SAMPLING PROGRAM

Twenty (20) boreholes were excavated throughout the Site area to attempt to identify any contamination. A total of 40 samples (1 shallow sample and 1 deep sample) were taken from the boreholes. A borehole location plan is attached in Appendix A.

4 RESULTS

4.1 FIELD INVESTIGATION RESULTS

The borehole investigation revealed that the site is generally underlain by topsoil and fill materials overlying natural alluvial deposits comprising low plasticity clayey silt, low to medium plasticity silty clay & silty sandy clay and medium to high plasticity silty clays extending to the borehole termination depth at 4.5 and 6.0m.

The moisture condition of the underlying materials generally varied throughout the profile. Groundwater was not encountered in the investigation depth of 6.0m. Depth to groundwater (and subsequent analysis) at the site is not known.

No obvious signs (visual and olfactory) of contamination were noted during the field investigation. Surface samples were analysed for various contaminants and deeper samples analysed for asbestos to ensure confirmation of onsite results.

The borehole location plan is attached in Appendix A and borehole logs attached in Appendix B.

4.2 SOIL ANALYTICAL RESULTS

Sample analysis was undertaken by EnviroLab Pty Ltd, a NATA accredited laboratory in Sydney. A borehole location plan is in Appendix A and a detailed laboratory report as provided by EnviroLab is presented in Appendix C. Table 3 summarises the analytical results.

Table 3: Analytical results summary - *N.D – Not Detected, BGV - Below Guideline Value*

Sample ID	Sample Depth (m)	Analyte	Adopted Threshold Concentration (mg/kg)	Result (mg/kg)
1A-BH1	0-0.5	TPH C_6-C_9	700	ND
		TPH C_{10}-C_{16}	1000	ND
		TPH C_{16}-C_{34}	3500	ND
		TPH C_{34}-C_{40}	10000	ND
		BTEX	Various	ND
		PAH	4000	ND
		OCP	Various	ND
		OPP	Various	ND
		Metals (As, Cd, Cr, Cu, Hg, Pb, Ni & Zn)	Various	BGV
1F-BH1	3.6-3.9	Asbestos	Nil	ND
2A BH2	0.0-0.5	TPH C_6-C_9	700	ND
		TPH C_{10}-C_{16}	1000	ND
		TPH C_{16}-C_{34}	3500	ND
		TPH C_{34}-C_{40}	10000	ND
		BTEX	Various	ND
		PAH	4000	ND
		OCP	Various	ND
		OPP	Various	ND
		Metals (As, Cd, Cr, Cu, Hg, Pb, Ni & Zn)	Various	BGV
2G-BH2	5.5-5.8	Asbestos	Nil	ND
3A-BH3	0.2-0.7	TPH C_6-C_9	700	ND
		TPH C_{10}-C_{16}	1000	ND
		TPH C_{16}-C_{34}	3500	ND
		TPH C_{34}-C_{40}	10000	ND
		BTEX	Various	ND
		PAH	4000	ND
		OCP	Various	ND
		OPP	Various	ND
		Metals (As, Cd, Cr, Cu, Hg, Pb, Ni & Zn)	Various	BGV
3F-BH3	4.6-5.0	Asbestos	Nil	ND

Table 3 (cont): Analytical results summary - *N.D – Not Detected BGV - Below Guideline Value*

Sample ID	Sample Depth (m)	Analyte	Adopted Threshold Concentration (mg/kg)	Result (mg/kg)
4A BH4	0-0.5	TPH C_6-C_9	700	ND
		TPH C_{10}-C_{16}	1000	ND
		TPH C_{16}-C_{34}	3500	ND
		TPH C_{34}-C_{40}	10000	ND
		BTEX	Various	ND
		PAH	4000	ND
		OCP	Various	ND
		OPP	Various	ND
		Metals (As, Cd, Cr, Cu, Hg, Pb, Ni & Zn)	Various	BGV
4G-BH4	4.9-5.3	Asbestos	Nil	ND
5A BH5	0-0.5	TPH C_6-C_9	700	ND
		TPH C_{10}-C_{16}	1000	ND
		TPH C_{16}-C_{34}	3500	ND
		TPH C_{34}-C_{40}	10000	ND
		BTEX	Various	ND
		PAH	4000	ND
		OCP	Various	ND
		OPP	Various	ND
		Metals (As, Cd, Cr, Cu, Hg, Pb, Ni & Zn)	Various	BGV
5G-BH5	4.5-5.0	Asbestos	Nil	ND
6A BH6	0-0.5	TPH C_6-C_9	700	ND
		TPH C_{10}-C_{16}	1000	ND
		TPH C_{16}-C_{34}	3500	ND
		TPH C_{34}-C_{40}	10000	ND
		BTEX	Various	ND
		PAH	4000	ND
		OCP	Various	ND
		OPP	Various	ND
		Metals (As, Cd, Cr, Cu, Hg, Pb, Ni & Zn)	Various	BGV
6E-BH6	3.9-4.9	Asbestos	Nil	ND
7A BH7	0-0.5	TPH C_6-C_9	700	ND
		TPH C_{10}-C_{16}	1000	ND
		TPH C_{16}-C_{34}	3500	ND
		TPH C_{34}-C_{40}	10000	ND
		BTEX	Various	ND
		PAH	4000	ND
		OCP	Various	ND
		OPP	Various	ND
		Metals (As, Cd, Cr, Cu, Hg, Pb, Ni & Zn)	Various	BGV
7D-BH7	2.3-3.0	Asbestos	Nil	ND

Table 3 (cont): Analytical results summary - *N.D – Not Detected BGV - Below Guideline Value*

Sample ID	Sample Depth (m)	Analyte	Adopted Threshold Concentration (mg/kg)	Result (mg/kg)
8A BH8	0-0.5	TPH C_6-C_9	700	ND
		TPH C_{10}-C_{16}	1000	ND
		TPH C_{16}-C_{34}	3500	ND
		TPH C_{34}-C_{40}	10000	ND
		BTEX	Various	ND
		PAH	4000	ND
		OCP	Various	ND
		OPP	Various	ND
		Metals (As, Cd, Cr, Cu, Hg, Pb, Ni & Zn)	Various	BGV
8F-BH8	3.7-4.4	Asbestos	Nil	ND
9A BH9	0-0.5	TPH C_6-C_9	700	ND
		TPH C_{10}-C_{16}	1000	ND
		TPH C_{16}-C_{34}	3500	ND
		TPH C_{34}-C_{40}	10000	ND
		BTEX	Various	ND
		PAH	4000	ND
		OCP	Various	ND
		OPP	Various	ND
		Metals (As, Cd, Cr, Cu, Hg, Pb, Ni & Zn)	Various	BGV
9H-BH9	5.0-5.5	Asbestos	Nil	ND
10A BH10	0-0.5	TPH C_6-C_9	700	ND
		TPH C_{10}-C_{16}	1000	ND
		TPH C_{16}-C_{34}	3500	ND
		TPH C_{34}-C_{40}	10000	ND
		BTEX	Various	ND
		PAH	4000	ND
		OCP	Various	ND
		OPP	Various	ND
		Metals (As, Cd, Cr, Cu, Hg, Pb, Ni & Zn)	Various	BGV
10E-BH10	2.9-3.5	Asbestos	Nil	ND
11A BH11	0-0.5	TPH C_6-C_9	700	ND
		TPH C_{10}-C_{16}	1000	ND
		TPH C_{16}-C_{34}	3500	ND
		TPH C_{34}-C_{40}	10000	ND
		BTEX	Various	ND
		PAH	4000	ND
		OCP	Various	ND
		OPP	Various	ND
		Metals (As, Cd, Cr, Cu, Hg, Pb, Ni & Zn)	Various	BGV
11G-BH11	4.7-5.9	Asbestos	Nil	ND

Table 3 (cont): Analytical results summary - *N.D – Not Detected BGV - Below Guideline Value*

Sample ID	Sample Depth (m)	Analyte	Adopted Threshold Concentration (mg/kg)	Result (mg/kg)
16B BH16	0.3-0.8	TPH C_6-C_9	700	ND
		TPH C_{10}-C_{16}	1000	ND
		TPH C_{16}-C_{34}	3500	ND
		TPH C_{34}-C_{40}	10000	ND
		BTEX	Various	ND
		PAH	4000	ND
		OCP	Various	ND
		OPP	Various	ND
		Metals (As, Cd, Cr, Cu, Hg, Pb, Ni & Zn)	Various	BGV
16G-BH16	3.6-4.5	Asbestos	Nil	ND
17B BH17	0.2-0.7	TPH C_6-C_9	700	ND
		TPH C_{10}-C_{16}	1000	ND
		TPH C_{16}-C_{34}	3500	ND
		TPH C_{34}-C_{40}	10000	ND
		BTEX	Various	ND
		PAH	4000	ND
		OCP	Various	ND
		OPP	Various	ND
		Metals (As, Cd, Cr, Cu, Hg, Pb, Ni & Zn)	Various	BGV
17FG-BH17	3.0-4.5	Asbestos	Nil	ND
18C BH18	0.3-0.8	TPH C_6-C_9	700	ND
		TPH C_{10}-C_{16}	1000	ND
		TPH C_{16}-C_{34}	3500	ND
		TPH C_{34}-C_{40}	10000	ND
		BTEX	Various	ND
		PAH	4000	ND
		OCP	Various	ND
		OPP	Various	ND
		Metals (As, Cd, Cr, Cu, Hg, Pb, Ni & Zn)	Various	BGV
18F-BH18	2.2-3.0	Asbestos	Nil	ND
19A BH19	0-0.5	TPH C_6-C_9	700	ND
		TPH C_{10}-C_{16}	1000	ND
		TPH C_{16}-C_{34}	3500	ND
		TPH C_{34}-C_{40}	10000	ND
		BTEX	Various	ND
		PAH	4000	ND
		OCP	Various	ND
		OPP	Various	ND
		Metals (As, Cd, Cr, Cu, Hg, Pb, Ni & Zn)	Various	BGV
19H-BH19	3.5-4.5	Asbestos	Nil	ND

Table 3 (cont): Analytical results summary - *N.D – Not Detected BGV - Below Guideline Value*

Sample ID	Sample Depth (m)	Analyte	Adopted Threshold Concentration (mg/kg)	Result (mg/kg)
20A BH20	0-0.5	TPH C_6-C_9	700	ND
		TPH C_{10}-C_{16}	1000	ND
		TPH C_{16}-C_{34}	3500	ND
		TPH C_{34}-C_{40}	10000	ND
		BTEX	Various	ND
		PAH	4000	0.48
		OCP	Various	ND
		OPP	Various	ND
		Metals (As, Cd, Cr, Cu, Hg, Pb, Ni & Zn)	Various	BGV
20F-BH20	3.6-4.5	Asbestos	Nil	ND
21A BH21	0-0.5	TPH C_6-C_9	700	ND
		TPH C_{10}-C_{16}	1000	ND
		TPH C_{16}-C_{34}	3500	ND
		TPH C_{34}-C_{40}	10000	ND
		BTEX	Various	ND
		PAH	4000	ND
		OCP	Various	ND
		OPP	Various	ND
		Metals (As, Cd, Cr, Cu, Hg, Pb, Ni & Zn)	Various	BGV
21F-BH21	4.1-4.5	Asbestos	Nil	ND
22A BH22	0-0.5	TPH C_6-C_9	700	ND
		TPH C_{10}-C_{16}	1000	ND
		TPH C_{16}-C_{34}	3500	ND
		TPH C_{34}-C_{40}	10000	ND
		BTEX	Various	ND
		PAH	4000	ND
		OCP	Various	ND
		OPP	Various	ND
		Metals (As, Cd, Cr, Cu, Hg, Pb, Ni & Zn)	Various	BGV
22F-BH22	4.9-5.2	Asbestos	Nil	ND
23A BH23	0-0.5	TPH C_6-C_9	700	ND
		TPH C_{10}-C_{16}	1000	ND
		TPH C_{16}-C_{34}	3500	ND
		TPH C_{34}-C_{40}	10000	ND
		BTEX	Various	ND
		PAH	4000	ND
		OCP	Various	ND
		OPP	Various	ND
		Metals (As, Cd, Cr, Cu, Hg, Pb, Ni & Zn)	Various	BGV
23D-BH23	3.5-3.8	Asbestos	Nil	ND

Table 3 (cont): Analytical results summary - *N.D – Not Detected BGV - Below Guideline Value*

Sample ID	Sample Depth (m)	Analyte	Adopted Threshold Concentration (mg/kg)	Result (mg/kg)
24A BH24	0-0.5	TPH C_6-C_9	700	ND
		TPH C_{10}-C_{16}	1000	ND
		TPH C_{16}-C_{34}	3500	ND
		TPH C_{34}-C_{40}	10000	ND
		BTEX	Various	ND
		PAH	4000	ND
		OCP	Various	ND
		OPP	Various	ND
		Metals (As, Cd, Cr, Cu, Hg, Pb, Ni & Zn)	Various	BGV
24G-BH24	4.1-4.5	Asbestos	Nil	ND

5 DISCUSSION OF RESULTS AND RECOMMENDATIONS

The analytical results (Table 3) of the samples collected for this Limited Phase 2 confirmed the field results. There appears to have been no adverse impacts to the soil materials from on site or off site sources. All sample results were found well below the adopted remediation criteria for Commercial/Industrial development.

The Site is therefore considered clean with respect to those analytes tested. It is therefore considered suitable for Commercial/Industrial development and no further investigations are considered necessary.

Nathan McLaren
Environmental Consultant
Aitken Rowe Testing Laboratories Pty Ltd

6 LIMITS OF INVESTIGATION

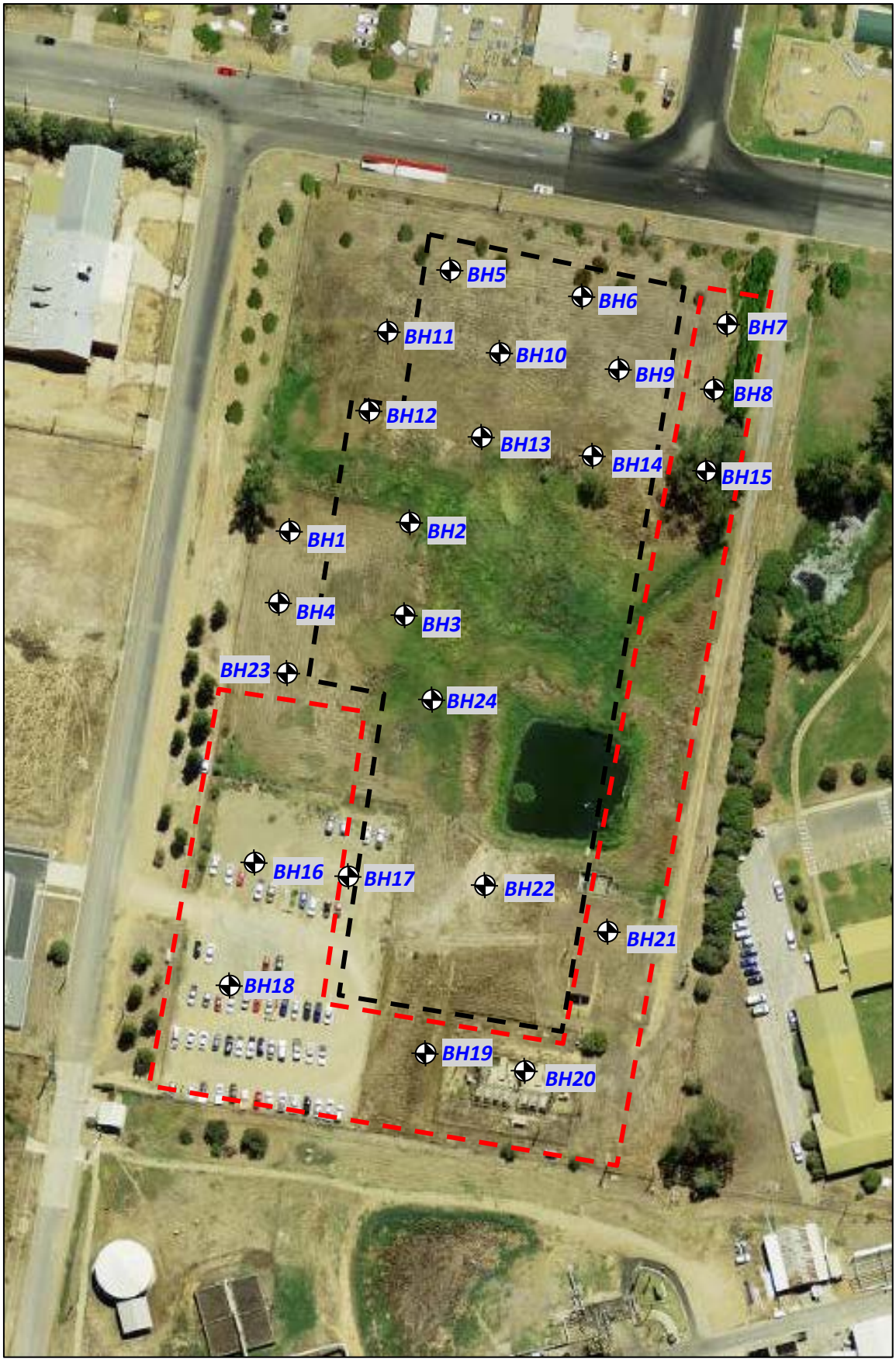
The recommendations made in this report are based on the assumption that the test results are representative of the overall subsurface conditions. However, it should be noted that even under optimum circumstances, actual conditions in some parts of the site may differ from those said to exist, because no environmental consultant, no matter how qualified, and no subsurface exploration program, no matter how comprehensive, can reveal all that is hidden by earth, rock and time.

The client should also be aware that our recommendations refer only to our test site locations and the ground level at the time of testing.

The recommendations in this report are based on the following:-

a) The information gained from this investigation
b) The results received from a NATA accredited environmental laboratory
c) Historical information
d) Information supplied by the client

APPENDIX A
BOREHOLE LOCATION PLAN



AITKEN ROWE TESTING LABORATORIES PTY LTD

Registration Number: S16-195

Client: TEYS AUSTRALIA PTY LTD – WAGGA WAGGA, NSW

Project: GEOTECHNICAL INVESTIGATION
PROPOSED MEAT PROCESSING FACILITY
TEYS BOMEN PLANT, WAGGA WAGGA NSW
BOREHOLE & DCP TEST LOCATION PLAN

APPENDIX B
BOREHOLE LOGS WITH EXPLANATORY NOTE

AITKEN ROWE TESTING LABORATORIES PTY LTD

Borehole No.: **1**
Sheet No.: 1 of 1

Ground Level: Existing
Method: Auger Drilling with TC Bit

Date: 4/05/2016

USCS Symbol	Description	Depth (m)	Moisture Condition	Consistency/ Rel. Density	Sample Type	Sample No.	Field. Test SPT	Remarks & Field Records
ML	TOPSOIL: Sandy SILT; low plasticity, pale brown, fine to coars sand		MC<PL	St.				NATURAL
ML	Sandy SILT; low plasticity, brown, fine to medium sand			VSt.	D	1A		Composite sample for enviromental testing
CL-CI	Silty Sandy CLAY; low to medium plasticity, orange brown, fine to coarse sand	0.5			D	1B		
CI	Silty CLAY; medium plasticity, mottled orange grey brown, with fine to medium sand	1.0						
					D	1C		
		1.5						
		2.0	MC≤PL		D	1D		
							2.5	
		2.5			D	1E	SPT 7, 10, 15 N = 25	
		3.0					2.95	
CH	Silty CLAY; high plasticity, mottled orange grey, with fine to medium sand	3.5	MC≥PL		D	1F		
		4.0					4.0	
CH	Silty CLAY; high plasticity, mottled yellow grey, with fine to coarse sand				D	1G	SPT 7, 10, 14 N = 24	
		4.5					4.45	
		5.0						
CH	Silty CLAY; high plasticity, yellow brown, with fine to coarse sand, with extremely weathered rock bands		MC>PL	VSt.-H				Residual
		5.5			D	1H		
		6.0						

End of Borehole (BH1) @ 6.0m

Logged By: NM/DR

Scale: As shown

Dry on completion

Registration No.: S16-195
Project/Location: Geotechnical Investigation - Proposed Meat Processing Facility, TEYS Bomen Plant, Dampier Street, Wagga Wagga, NSW
Client: TEYS Australia Pty Ltd - Wagga Wagga, NSW

AITKEN ROWE TESTING LABORATORIES PTY LTD

Borehole No.: **2**
Sheet No.: 1 of 1

Ground Level: Existing
Method: Auger Drilling with TC Bit

Date: 4/05/2016

USCS Symbol	Description	Depth (m)	Moisture Condition	Consistency/ Rel. Density	Sample Type	Sample No.	Field. Test	Remarks & Field Records
ML	TOPSOIL: Clayey SILT; low plasticity, dark grey, with fine to coarse sand		MC>PL	F				NATURAL
	Clayey SILT; low plasticity, grey, trace sand		MC<PL	VSt.	D	2A		Composite sample for enviromental testing
CL-Cl	Silty Sandy CLAY; low to medium plasticity, mottled orange brown, fine to coarse sand	0.5	MC>PL	S-F	D	2B		
		1.0		St.-VSt.				
Cl-CH	Silty CLAY; medium to high plasticity, mottled orange grey brown, with fine to medium sand	1.5	MC≤PL	VSt.	D	2C		
		2.0						
		2.5						
		3.0					3.0	
					D	2D	SPT 6, 9, 11 N = 20	
		3.5					3.45	
CH	Silty CLAY; high plasticity, mottled yellow brown, with fine to medium sand	4.0	MC≥PL		D	2E		
		4.5					4.5	
					D	2F	SPT 6, 8, 11 N = 19	
		5.0					4.95	
		5.5			D	2G		
		6.0						

End of Borehole (BH2) @ 6.0m

Logged By: NM/DR

Scale: As shown

Dry on completion

Registration No.: S16-195
Project/Location: Geotechnical Investigation - Proposed Meat Processing Facility, TEYS Bomen Plant, Dampier Street, Wagga Wagga, NSW
Client: TEYS Australia Pty Ltd - Wagga Wagga, NSW

AITKEN ROWE TESTING LABORATORIES PTY LTD

Borehole No.: **3**
Sheet No.: 1 of 1

Ground Level: Existing
Method: Auger Drilling with TC Bit

Date: 4/05/2016

USCS Symbol	Description	Depth (m)	Moisture Condition	Consistency/ Rel. Density	Sample Type	Sample No.	Field. Test	Remarks & Field Records
ML	TOPSOIL: Clayey SILT; low plasticity, dark grey, with fine to coarse sand		MC>PL	F-St.				NATURAL
ML	Clayey SILT; low plasticity, dark grey, with fine to coarse sand	0.5			D	3A		← Seepage from dam outflow @ 0.2m to 1.2m Composite sample for enviromental testing
CL-Cl	Silty Sandy CLAY; low to medium plasticity, orange brown, fine to medium sand	1.0			D	3B		
CL-Cl	Silty Sandy CLAY; low to medium plasticity, orange brown, fine to coarse sand	1.5		St.-VSt.	D	3C		MC = 16.5%
		2.0		VSt.				
		2.5						
Cl	Silty CLAY; medium plasticity, mottled orange grey brown, with fine to coarse sand		MC≤PL					
		3.0			D	3D		
		3.5					3.5	
					D	3E	SPT 7, 9, 11 N = 20	
		4.0					3.95	
		4.5						
CH	Silty CLAY; high plasticity, yellow brown, with fine to medium sand		MC>PL	VSt.-H				Residual
					D	3F		
		5.0						
		5.5					5.5	
					D	3G	SPT 14, 14, 18 N = 32	
		6.0						

End of Borehole (BH3) @ 5.95m

Logged By: NM/DR

Scale: As shown

Seepage from dam outflow @ 0.2m to 1.2m

Registration No.: S16-195
Project/Location: Geotechnical Investigation - Proposed Meat Processing Facility, TEYS Bomen Plant, Dampier Street, Wagga Wagga, NSW
Client: TEYS Australia Pty Ltd - Wagga Wagga, NSW

AITKEN ROWE TESTING LABORATORIES PTY LTD

Borehole No.: **4**
Sheet No.: 1 of 1

Ground Level: Existing
Method: Auger Drilling with TC Bit

Date: 4/05/2016

USCS Symbol	Description	Depth (m)	Moisture Condition	Consistency/ Rel. Density	Sample Type	Sample No.	Field. Test	Remarks & Field Records
							SPT	
ML	TOPSOIL: Clayey SILT; low plasticity, grey, with fine to coarse sand		MC<PL	St.				NATURAL
CL-CI	Silty Sandy CLAY; low to medium plasticity, orange brown, fine to coarse sand	0.5		VSt.	D	4A		Composite sample for enviromental testing
					D	4B		
		1.0						
CI	Silty CLAY; medium plasticity, mottled orange grey brown, with fine to medium sand	1.5					1.5	
					D	4C	SPT 9, 14, 16 N = 30	
		2.0					1.95	
			MC≤PL					
		2.5			D	4D		
		3.0					3.0	
					D	4E	SPT 6, 8, 12 N = 20	
		3.5					3.45	
CH	Silty CLAY; high plasticity, mottled yellow grey, with fine to medium sand		MC≥PL					
		4.0						
					D	4F		
		4.5						
		5.0			D	4G		
		5.5						
		6.0						

End of Borehole (BH4) @ 6.0m

Logged By: NM/DR

Scale: As shown

Dry on completion

Registration No.: S16-195
Project/Location: Geotechnical Investigation - Proposed Meat Processing Facility, TEYS Bomen Plant, Dampier Street, Wagga Wagga, NSW
Client: TEYS Australia Pty Ltd - Wagga Wagga, NSW

AITKEN ROWE TESTING LABORATORIES PTY LTD

Borehole No.: **5**
Sheet No.: 1 of 1

Ground Level: Existing
Method: Auger Drilling with TC Bit

Date: 4/05/2016

USCS Symbol	Description	Depth (m)	Moisture Condition	Consistency/ Rel. Density	Sample Type	Sample No.	Field. Test	Remarks & Field Records
					Type	No.	SPT	
ML	TOPSOIL: Clayey SILT; low plasticity, grey, with fine to coarse sand		MC<PL	St.				NATURAL
CI-CH	Silty CLAY; medium to high plasticity, orange brown, with fine to medium sand	0.5		VSt.	D	5A		Composite sample for enviromental testing
		1.0			D	5B		
		1.5					1.5	
				H	D	5C	SPT 22, 22, 20 N = 42	
CI-CH	Silty CLAY; medium to high plasticity, orange brown, with fine to coarse sand	2.0					1.95	
		2.5			D	5D		
		3.0					3.0	
				VSt.-H	D	5E	SPT 8, 13, 19 N = 32	
		3.5					3.45	
CH	Silty CLAY; high plasticity, mottled orange yellow brown, with fine to medium sand	4.0			D	5F		
		4.5						
CH	Silty CLAY; high plasticity, mottled orange yellow grey, with fine to coarse sand		MC≤PL		D	5G		
		5.0						
CH	Silty CLAY; high plasticity, mottled orange yellow grey, with with fine to coare sand, trace gravel				D	5H		
CH	Silty CLAY; high plasticity, mottled orange grey brown, with fine to coarse sand, with extremeley weathered rock bands rock bands	5.5			D	5I		
		6.0						

End of Borehole (BH5) @ 6.0m

Logged By: NM/DR

Scale: As shown

Dry on completion

Registration No.: S16-195
Project/Location: Geotechnical Investigation - Proposed Meat Processing Facility, TEYS Bomen Plant, Dampier Street, Wagga Wagga, NSW
Client: TEYS Australia Pty Ltd - Wagga Wagga, NSW

AITKEN ROWE TESTING LABORATORIES PTY LTD

Borehole No.: **6**
Sheet No.: 1 of 1

Ground Level: Existing
Method: Auger Drilling with TC Bit

Date: 4/05/2016

USCS Symbol	Description	Depth (m)	Moisture Condition	Consistency/ Rel. Density	Sample Type	Sample No.	Field. Test SPT	Remarks & Field Records
ML	TOPSOIL: Clayey SILT; low plasticity, grey, with fine to coarse sand		MC<PL	VSt.				NATURAL
ML	Sandy SILT; low plasticity, grey, fine to coarse sand				D	6A		Composite sample for enviromental testing
CI-CH	Silty CLAY; medium to high plasticity, orange brown, with fine to medium sand	0.5			D	6B		
		1.0						
CI-CH	Silty CLAY; medium to high plasticity, yellow brown orange, with fine to medium sand	1.5		H				
		2.0					2.0	
					D	6C	SPT 17, 19, 21 N = 40	
		2.5					2.45	
CI-CH	Silty CLAY; medium to high plasticity, orange yellow grey, with fine to medium sand	3.0			D	6D		
		3.5						
CH	Silty CLAY; high plasticity, orange red yellow, with fine to medium sand	4.0						
		4.5			D	6E		
		5.0						
CH	Silty CLAY; high plasticity, orange yellow brown, with fine to medium sand, trace gravel	5.5			D	6F		
		6.0						

End of Borehole (BH6) @ 6.0m

Logged By: NM/DR

Scale: As shown

Dry on completion

Registration No.: S16-195
Project/Location: Geotechnical Investigation - Proposed Meat Processing Facility, TEYS Bomen Plant, Dampier Street, Wagga Wagga, NSW
Client: TEYS Australia Pty Ltd - Wagga Wagga, NSW

AITKEN ROWE TESTING LABORATORIES PTY LTD

Borehole No.: **7**
Sheet No.: 1 of 1

Ground Level: Existing
Method: Auger Drilling with TC Bit

Date: 4/05/2016

USCS Symbol	Description	Depth (m)	Moisture Condition	Consistency/ Rel. Density	Sample Type	Sample No.	Field. Test	Remarks & Field Records
ML	TOPSOIL: Clayey SILT; low plasticity, grey, with fine to coarse sand		MC<PL	St.				NATURAL
ML	Sandy SILT; low plastciity, brown grey, fine to coarse sand			VSt.	D	7A		Composite sample for enviromental testing
CI	Silty CLAY; medium plasticity, orange brown, with fine to medium sand	0.5						
		1.0			D	7B		MC = 14.8% CBR = 4%
		1.5					1.5	
				H	D	7C	SPT 10, 16, 22 N = 38	
		2.0						
CI-CH	Silty CLAY; medium to high plasticity, yellow brown orange, with fine to medium sand		MC≤PL				1.95	
		2.5			D	7D		
		3.0						
		3.5						
CH	Silty CLAY; high plasticity, mottled orange grey yellow, with fine to coarse sand							
		4.0					4.0	
					D	7E	SPT 13, 17, 20 N = 37	
	End of Borehole (BH7) @ 4.45m	4.5						
		5.0						
		5.5						
		6.0						

Logged By: NM/DR

Scale: As shown

Dry on completion

Registration No.: S16-195
Project/Location: Geotechnical Investigation - Proposed Meat Processing Facility, TEYS Bomen Plant, Dampier Street, Wagga Wagga, NSW
Client: TEYS Australia Pty Ltd - Wagga Wagga, NSW

AITKEN ROWE TESTING LABORATORIES PTY LTD

Borehole No.: **8**
Sheet No.: 1 of 1

Ground Level: Existing
Method: Auger Drilling with TC Bit

Date: 4/05/2016

USCS Symbol	Description	Depth (m)	Moisture Condition	Consistency/ Rel. Density	Sample Type	Sample No.	Field. Test SPT	Remarks & Field Records
ML	TOPSOIL: Sandy SILT; low plasticity, pale brown, fine to coarse sand		MC<PL	St.				NATURAL
ML	Sandy SILT; low plasticity, red brown, fine to coare sand			VSt.	D	8A		Composite sample for enviromental testing
CI	Silty CLAY; medium plasticity, red brown, with fine to medium sand	0.5						
		1.0			D	8B		
		1.5					1.5	
				H	D	8C	SPT 8, 15, 18 N = 33	
CI-CH	Silty CLAY; medium to high plasticity, red orange brown, with fine to medium sand	2.0					1.95	
					D	8D		
		2.5						
		3.0					3.0	
					D	8E	SPT 10, 17, 19 N = 36	
CH	Silty CLAY; high plasticity, mottled orange yellow grey, with fine to coarse sand, trace gravel	3.5					3.45	
		4.0			D	8F		
		4.5						
CH	Silty CLAY; high plasticity, mottled orange grey brown, with fine to coarse sand, with extremeley weathered rock bands							
		5.0			D	8G		
		5.5						
		6.0						

End of Borehole (BH8) @ 6.0m

Logged By: NM/DR

Scale: As shown

Dry on completion

Registration No.: S16-195
Project/Location: Geotechnical Investigation - Proposed Meat Processing Facility, TEYS Bomen Plant, Dampier Street, Wagga Wagga, NSW
Client: TEYS Australia Pty Ltd - Wagga Wagga, NSW

AITKEN ROWE TESTING LABORATORIES PTY LTD

Borehole No.: **9**
Sheet No.: 1 of 1

Ground Level: Existing
Method: Auger Drilling with TC Bit

Date: 4/05/2016

USCS Symbol	Description	Depth (m)	Moisture Condition	Consistency/ Rel. Density	Sample Type	Sample No.	Field. Test SPT	Remarks & Field Records
ML	TOPSOIL: Sandy SILT; low plasticity, dark brown, fine to coarse sand		MC<PL	St.				NATURAL
ML	Clayey SILT; low plasticity, red brown, with fine to coarse sand			VSt.	D	9A		Composite sample for enviromental testing
CI	Silty CLAY; medium plasticity, red brown, with fine to medium sand	0.5						
		1.0			D	9B		
		1.5						
CI-CH	Silty CLAY; medium to high plasticity, mottled orange yellow grey, with fine to coarse sand	2.0			D	9C		
		2.5						
CI-CH	Silty CLAY; medium to high plasticity, mottled red orange brown, with fine to medium sand				D	9D	3.0	
		3.0			D	9E	SPT 7, 12, 11 N = 23	
		3.5					3.45	
CH	Silty CLAY; high plasticity, mottled orange yellow brown, with fine to coarse sand, trace gravel		MC≤PL	H	D	9F		
		4.0						
		4.5						
CH	Silty CLAY; high plasticity, mottled orange grey brown, with fine to coarse sand, trace gravel				D	9G		
		5.0						
CH	Silty CLAY; high plasticity, mottled red brown orange, with fine to coarse sand, trace gravel				D	9H		
		5.5					5.5	
					D	9I	SPT 9, 16, 21 N = 37	
		6.0						

End of Borehole (BH9) @ 5.95m

Logged By: NM/DR

Scale: As shown

Dry on completion

Registration No.: S16-195
Project/Location: Geotechnical Investigation - Proposed Meat Processing Facility, TEYS Bomen Plant, Dampier Street, Wagga Wagga, NSW
Client: TEYS Australia Pty Ltd - Wagga Wagga, NSW

AITKEN ROWE TESTING LABORATORIES PTY LTD

Borehole No.: **10**
Sheet No.: 1 of 1

Ground Level: Existing
Method: Auger Drilling with TC Bit

Date: 4/05/2016

USCS Symbol	Description	Depth (m)	Moisture Condition	Consistency/ Rel. Density	Sample Type	Sample No.	Field. Test	Remarks & Field Records
ML	TOPSOIL: Clayey SILT; low plasticity, dark brown, with fine to coarse sand		MC<PL	St.				NATURAL
ML	Clayey SILT; low plasticity, brown grey, with fine to coarse sand			VSt.	D	10A		Composite sample for enviromental testing
CI	Silty CLAY; medium plasticity, red brown, with fine to medium sand	0.5						
					D	10B		
		1.0						
CI-CH	Silty CLAY; medium to high plasticity, mottled orange brown yellow, with fine to medium sand	1.5			D	10C		
		2.0					2.0	
					D	10D	SPT 7, 9, 16 N = 25	
		2.5					2.45	
CI-CH	Silty CLAY; medium to high plasticity, orange brown, with fine to medium sand	3.0			D	10E		
		3.5						
CI-CH	Silty CLAY; medium to high plasticity, mottled orange grey brown, with fine to coarse sand, trace gravel		MC≤PL	VSt.-H				
		4.0			D	10F		
		4.5					4.5	
CH	Silty CLAY; high plasticity, orange brown yellow, with fine to coarse sand, trace gravel				D	10G	SPT 10, 14, 18 N = 32	
		5.0					4.95	
		5.5			D	10H		
		6.0						

End of Borehole (BH10) @ 6.0m

Logged By: NM/DR

Scale: As shown

Dry on completion

Registration No.: S16-195
Project/Location: Geotechnical Investigation - Proposed Meat Processing Facility, TEYS Bomen Plant, Dampier Street, Wagga Wagga, NSW
Client: TEYS Australia Pty Ltd - Wagga Wagga, NSW

AITKEN ROWE TESTING LABORATORIES PTY LTD

Borehole No.: **11**
Sheet No.: 1 of 1

Ground Level: Existing
Method: Auger Drilling with TC Bit

Date: 4/05/2016

USCS Symbol	Description	Depth (m)	Moisture Condition	Consistency/ Rel. Density	Sample Type	Sample No.	Field. Test SPT	Remarks & Field Records
ML	TOPSOIL: Sandy SILT; low plasticity, brown, fine to coarse sand		MC<PL	St.				NATURAL
ML	Clayey Sandy SILT; low plasticity, red brown, fine to coarse sand			VSt.	D	11A		Composite sample for enviromental testing
CI	Silty CLAY; medium plasticity, red brown, with fine to medium sand	0.5						
					D	11B		
		1.0					1.0	
					D	11C	SPT 10, 13, 15 N = 28	
		1.5						
CI-CH	Silty CLAY; medium to high plasticity, orange brown yellow, with fine to coarse sand, trace gravel		MC=PL				2.45	
		2.0			D	11D		
		2.5						
CI-CH	Silty CLAY; medium to high plasticity, orange brown yellow, with fine to coarse sand, trace gravel		MC≤PL					
		3.0						
					D	11E		
		3.5						
		4.0					4.0	
					D	11F	SPT 7, 13, 16 N = 28	
		4.5						
							4.45	
CH	Silty CLAY; high plasticity, mottled orange grey brown, with fine to coarse sand, trace gravel			VSt.-H				
		5.0						
					D	11G		
		5.5						
		6.0						

End of Borehole (BH11) @ 6.0m

Logged By: NM/DR

Scale: As shown

Dry on completion

Registration No.: S16-195
Project/Location: Geotechnical Investigation - Proposed Meat Processing Facility, TEYS Bomen Plant, Dampier Street, Wagga Wagga, NSW
Client: TEYS Australia Pty Ltd - Wagga Wagga, NSW

AITKEN ROWE TESTING LABORATORIES PTY LTD

Borehole No.: **16**
Sheet No.: 1 of 1

Ground Level: Existing
Method: Auger Drilling with TC Bit

Date: 4/05/2016

USCS Symbol	Description	Depth (m)	Moisture Condition	Consistency/ Rel. Density	Sample Type	Sample No.	Field. Test SPT	Remarks & Field Records
	Asphalt							FILL: Appears moderately compacted
GW	Silty Sandy GRAVEL; fine to coarse grained, grey, fine to coarse sand		M	MD				"Uncontrolled"
ML	Clayey SILT; low plasticity, brown, with fine to coarse sand	0.5	MC<PL	VSt.	D	16A		NATURAL
					D	16B		
CL-CI	Silty Sandy CLAY; low to medium plasticity, red brown, fine to coarse sand	1.0						
CL-CI	Silty Sandy CLAY; low to medium plasticity, orange brown, fine to coarse sand	1.5			D	16C		
		2.0			D	16D		
		2.5						
CI-CH	Silty CLAY; medium to high plasticity, orange red grey, with fine to coarse sand	3.0	MC>PL	VSt.-H	D	16E	3.0	
		3.5			D	16F	SPT 8, 10, 19 N = 29	
CH	Silty CLAY; high plasticity, mottled orange grey brown, with fine to coarse sand	4.0					3.45	
		4.5			D	16G		
	End of Borehole (BH16) @ 4.5m	5.0						
		5.5						
		6.0						

Logged By: NM/DR

Scale: As shown

Dry on completion

Registration No.: S16-195
Project/Location: Geotechnical Investigation - Proposed Meat Processing Facility, TEYS Bomen Plant, Dampier Street, Wagga Wagga, NSW
Client: TEYS Australia Pty Ltd - Wagga Wagga, NSW

AITKEN ROWE TESTING LABORATORIES PTY LTD

Borehole No.: **17**
Sheet No.: 1 of 1

Ground Level: Existing
Method: Auger Drilling with TC Bit

Date: 4/05/2016

USCS Symbol	Description	Depth (m)	Moisture Condition	Consistency/ Rel. Density	Sample Type	Sample No.	Field. Test SPT	Remarks & Field Records
	Asphalt							
GW	FILL: Silty Sandy GRAVEL; fine to coarse graind, red brown grey, medium to coarse sa		D	MD	D	17A		FILL: Appears moderately compacted "Uncontrolled"
ML	Sandy SILT; low to medium plastiity, brown, fine to coarse sand	0.5	MC<PL	VSt.				NATURAL
				St.	D	17B		
CL-Cl	Silty Sandy CLAY; low to medium plasticity, red brown, fine to coarse sand	1.0		VSt.-H	D	17C		
CL-Cl	Silty Sandy CLAY; low to medium plasticity, red orange brown, fine to coarse sand, trace calcite	1.5		H			1.5	
					D	17D	SPT 17, 22/300	
		2.0					1.8	
Cl	Silty CLAY; medium plasticity, mottled orange yellow brown, with fine to medium sand	2.5			D	17E		
Cl-CH	Silty CLAY; medium to high plasticity, orange brown grey, with fine to coarse sand, trace gravel	3.0		VSt.-H				
		3.5						
		4.0			D	17F		
		4.5						
	End of Borehole (BH17) @ 4.5m	5.0						
		5.5						
		6.0						

Logged By: NM/DR

Scale: As shown

Dry on completion

Registration No.: S16-195
Project/Location: Geotechnical Investigation - Proposed Meat Processing Facility, TEYS Bomen Plant, Dampier Street, Wagga Wagga, NSW
Client: TEYS Australia Pty Ltd - Wagga Wagga, NSW

AITKEN ROWE TESTING LABORATORIES PTY LTD

Borehole No.: **18**
Sheet No.: 1 of 1

Ground Level: Existing
Method: Auger Drilling with TC Bit

Date: 11/05/2016

USCS Symbol	Description	Depth (m)	Moisture Condition	Consistency/ Rel. Density	Sample Type	Sample No.	Field. Test	Remarks & Field Records
	Asphalt							
GW	Silty Sandy GRAVEL; fine to coarse grained, grey, fine to coarse sand, fines of low plasticity		D	MD	D	18A		FILL: Appears moderately compacted "Uncontrolled"
ML	Sandy Clayey SILT; low plasticity, red brown, fine to coarse sand	0.5	MC<PL	St.-VSt.	D	18B		NATURAL
CL-Cl	Silty Sandy CLAY; low to medium plasticity, red brown, fine to medium sand				D	18C		
CL-Cl	Silty Sandy CLAY; low to medium plasticity, orange brown, fine to coarse sand	1.0		VSt.	D	18D		
Cl	Silty CLAY; medium plasticity, yellow orange brown, with fine to medium sand	1.5			D	18E		
Cl-CH	Silty CLAY; medium to high plasticity, mottled orange yellow gr with fine to coarse sand, trace gravel	2.0	MC>PL		D	18F		
		2.5						
		3.0						
CH	Silty CLAY; high plasticity, red brown, with fine to coarse sand, trace gravel	3.5			D	18G		MC = 20.6% CBR = 2%
		4.0					4.0	
					D	18H	SPT 9, 11, 15 N = 26	
	End of Borehole (BH18) @ 4.45m	4.5						
		5.0						
		5.5						
		6.0						

Logged By: NM/DR

Scale: As shown

Seepage @ 3.0m

Registration No.: S16-195
Project/Location: Geotechnical Investigation - Proposed Meat Processing Facility, TEYS Bomen Plant, Dampier Street, Wagga Wagga, NSW
Client: TEYS Australia Pty Ltd - Wagga Wagga, NSW

AITKEN ROWE TESTING LABORATORIES PTY LTD

Borehole No.: **19**
Sheet No.: 1 of 1

Ground Level: Existing
Method: Auger Drilling with TC Bit

Date: 11/05/2016

USCS Symbol	Description	Depth (m)	Moisture Condition	Consistency/ Rel. Density	Sample Type	Sample No.	Field. Test	Remarks & Field Records
							SPT	
CL-CI	FILL: Silty CLAY; low to medium plasticity, red brown, with fine to coarse sand		MC<PL	F St.	D	19A		FILL: Appears moderately compacted "Uncontrolled"
ML	Clayey SILT; low to medium plasticity, brown, with fine to coarse sand	0.5		VSt.	D	19B		NATURAL
CI	Silty Sandy CLAY; medium plasticity, orange brown, fine to coarse sand, trace calcite	1.0			D	19C		MC = 12.8%
CI	Silty CLAY; medium plasticity, mottled orange grey brown, with fine to coarse sand, trace calcite	1.5			D	19D		
CI-CH	Silty CLAY; medium to high plasticity, red brown, with fine to coarse sand	2.0			D	19E		
CH	Silty CLAY; high plasticity, mottled yellow orange brown red, with fine to coarse sand, with extremeley weathered rock bands	2.5	MC>PL	VSt.-H	D	19F	2.5	
		3.0			D	19G	SPT 9, 14, 16 N = 30	
		3.5					2.95	
		4.0			D	19H		MC = 19.6% CBR = 2%
		4.5						
	End of Borehole (BH19) @ 4.5m	5.0						
		5.5						
		6.0						

Logged By: NM/DR

Scale: As shown

Dry on completion

Registration No.: S16-195
Project/Location: Geotechnical Investigation - Proposed Meat Processing Facility, TEYS Bomen Plant, Dampier Street, Wagga Wagga, NSW
Client: TEYS Australia Pty Ltd - Wagga Wagga, NSW

AITKEN ROWE TESTING LABORATORIES PTY LTD

Borehole No.: **20**
Sheet No.: 1 of 1

Ground Level: Existing
Method: Auger Drilling with TC Bit

Date: 11/05/2016

USCS Symbol	Description	Depth (m)	Moisture Condition	Consistency/ Rel. Density	Sample Type	Sample No.	Field. Test	Remarks & Field Records
CL-CI	FILL: Silty CLAY; low to medium plasticity, red brown, with fine to coarse sand, trace gravel		MC<PL	F St.	D	20A		FILL: Appears moderately compacted "Uncontrolled"
GW	Silty Sandy GRAVEL; fine to coarse grained, grey, fine to coarse sand, fines of low plasticity	0.5	D	MD				
CL-CI	Silty Sandy CLAY; low to medium plasticity, red brown, fine to coarse sand	1.0	MC<PL	VSt.	D	20B		NATURAL
CL-CI	Silty Sandy CLAY; low to medium plasticity, mottled orange grey brown, fine to coarse sand, trace gravel	1.5			D	20C		
CI	Silty CLAY; medium plasticity, yellow orange brown, with fine to medium sand	2.0			D	20D		
CI-CH	Silty CLAY; medium to high plasticity, mottled grey yellow red orange, with fine to medium sand	2.5						
CH	Silty CLAY; high plasticity, mottled orange grey brown, with fine to coarse sand, with extremeley weathered rock bands	3.0	MC>PL				3.0	
					D	20E	SPT 5, 9, 12 N = 21	
		3.5					3.45	
		4.0			D	20F		
		4.5						
	End of Borehole (BH20) @ 4.5m	5.0						
		5.5						
		6.0						

Logged By: NM/DR

Scale: As shown

Dry on completion

Registration No.: S16-195
Project/Location: Geotechnical Investigation - Proposed Meat Processing Facility, TEYS Bomen Plant, Dampier Street, Wagga Wagga, NSW
Client: TEYS Australia Pty Ltd - Wagga Wagga, NSW

AITKEN ROWE TESTING LABORATORIES PTY LTD

Borehole No.: **21**
Sheet No.: 1 of 1

Ground Level: Existing
Method: Auger Drilling with TC Bit

Date: 18/05/2016

USCS Symbol	Description	Depth (m)	Moisture Condition	Consistency/ Rel. Density	Sample Type	Sample No.	Field. Test	Remarks & Field Records
ML	FILL/TOPSOIL: Clayey SILT; low plasticity, brown, with fine to coarse sand		MC>PL	F-St.				FILL: Appears moderately compacted "Uncontrolled"
CI	FILL: Silty CLAY; medium plasticity, brown, with fine to coarse sand, trace gravel, trace brick	0.5			D	21A		
ML	Clayey SILT; low plasticity, pale brown, with fine to coarse sand			St.	D	21B		NATURAL
CI-CL	Silty Sandy CLAY; low to medium plasticity, orange brown, fine to coarse sand, trace gravel	1.0	MC<PL	VSt.	D	21C		MC = 10.0% CBR = 6%
		1.5						
CI	Silty CLAY; medium plasticity, mottled yellow orange brown, with fine to coarse sand	2.0			D	21D		
		2.5						
CI-CH	Silty CLAY; medium to high plasticity, mottled orange grey, with fine to coarse sand	3.0	MC>PL				3.0	
					D	21E	SPT 6, 12, 13 N = 25	
		3.5					3.45	
		4.0						
CH	Silty CLAY; high plasticity, mottled yellow grey, with fine to medium sand	4.5			D	21F		
	End of Borehole (BH21) @ 4.5m	5.0						
		5.5						
		6.0						

Logged By: NM/DR

Scale: As shown

Dry on completion

Registration No.: S16-195
Project/Location: Geotechnical Investigation - Proposed Meat Processing Facility, TEYS Bomen Plant, Dampier Street, Wagga Wagga, NSW
Client: TEYS Australia Pty Ltd - Wagga Wagga, NSW

AITKEN ROWE TESTING LABORATORIES PTY LTD

Borehole No.: **22**
Sheet No.: 1 of 1

Ground Level: Existing
Method: Auger Drilling with TC Bit

Date: 4/05/2016

USCS Symbol	Description	Depth (m)	Moisture Condition	Consistency/ Rel. Density	Sample Type	Sample No.	Field. Test	Remarks & Field Records
ML	FILL/TOPSOIL: Clayey SILT; low plasticity, brown, with fine to coarse sand		MC<PL	St.-VSt.				FILL: Appears moderately compacted "Uncontrolled"
CI	FILL: Silty CLAY; medium plasticity, orange brown, with fine to coarse sand, trace gravel		MC>PL		D	22A		
CL	FILL: Silty Sandy CLAY; low plasticity, brown, fine to coarse sand	0.5	MC<PL	VSt.				
CL	Silty Sandy CLAY; low plasticity, yellow brown, fine to coarse sand	1.0			D	22B		NATURAL MC = 8.0%
CI-CL	Silty Sandy CLAY; low to medium plasticity, mottled orange grey red, fine to coarse sand	1.5		H	D	22C		
		2.0						
		2.5			D	22D	2.5 SPT 12, 17, 24 N = 41	
		3.0					2.95	
CH	Silty CLAY; high plasticity, mottled yellow grey, with fine to medium sand	3.5	MC≤PL	VSt.-H	D	22E		
		4.0						
		4.5						
	GRANITE; extremely weathered, extremely low strength, grey, with clay bands	5.0	D		D	22F		
		5.5			D	22G	SPT 25/150mm	Refusal - Triple bounce
	End of Borehole (BH22) @ 5.65m	6.0						

Logged By: NM/DR

Scale: As shown

Dry on completion

Registration No.: S16-195
Project/Location: Geotechnical Investigation - Proposed Meat Processing Facility, TEYS Bomen Plant, Dampier Street, Wagga Wagga, NSW
Client: TEYS Australia Pty Ltd - Wagga Wagga, NSW

AITKEN ROWE TESTING LABORATORIES PTY LTD

Borehole No.: **23**
Sheet No.: 1 of 1

Ground Level: Existing
Method: Auger Drilling with TC Bit

Date: 18/05/2016

USCS Symbol	Description	Depth (m)	Moisture Condition	Consistency/ Rel. Density	Sample Type	Sample No.	Field. Test	Remarks & Field Records
ML	TOPSOIL: Clayey SILT; low plasticity, brown, with fine to coarse sand		MC>PL	F-St.				NATURAL
CL-Cl	Silty Sandy CLAY; low to medium plasticity, orange brown, fine to coarse sand	0.5			D	23A		
				St.	D	23B		
		1.0						
CL-Cl	Silty CLAY; low to medium plasticity, mottled yellow red brown, with fine to coarse sand			VSt.				
		1.5			D	23C		
		2.0						
		2.5						
		3.0						
CH	Silty CLAY; high plasticity, mottled yellow grey, with fine to coarse sand	3.5	MC≥PL		D	23D		
		4.0					4.0	
					D	23E	SPT 8, 11, 13 N = 24	
		4.5					4.45	
		5.0						
		5.5					5.5	
CH	Silty CLAY; high plasticity, mottled orange grey, with fine to coarse sand, with extremeley weathered rock bands			VSt.-H	D	23F	SPT 9, 29	Refusal - Triple bounce
	GRANITE; highly weathered, low strength, orange grey brown		D					
	End of Borehole (BH23) @ 5.8m	6.0						

Logged By: NM/DR

Scale: As shown

Dry on completion

Registration No.: S16-195
Project/Location: Geotechnical Investigation - Proposed Meat Processing Facility, TEYS Bomen Plant, Dampier Street, Wagga Wagga, NSW
Client: TEYS Australia Pty Ltd - Wagga Wagga, NSW

AITKEN ROWE TESTING LABORATORIES PTY LTD

Borehole No.: **24**
Sheet No.: 1 of 1

Ground Level: Existing
Method: Auger Drilling with TC Bit

Date: 18/05/2016

USCS Symbol	Description	Depth (m)	Moisture Condition	Consistency/ Rel. Density	Sample Type	Sample No.	Field. Test	Remarks & Field Records
ML	TOPSOIL: Clayey SILT; low plasticity, brown, with fine to coarse sand		MC>PL	F				NATURAL
ML	Clayey SILT; low plasticity, brown, with fine to medium sand				D	24A		
CL-Cl	Silty Sandy CLAY; low to medium plasticity, orange brown, fine to coarse sand	0.5	MC<PL	VSt.	D	24B		
		1.0						
CL-Cl	Silty Sandy CLAY; low to medium plasticity, yellow grey brown, fine to coarse sand		MC≥PL		D	24C	1.5	
		1.5			D	24D	SPT 7, 12, 17 N = 29	MC = 14.2%
		2.0					1.95	
Cl	Silty CLAY; medium plasticity, mottled orange grey,with fine to coarse sand	2.5			D	24E		
		3.0					3.0	
					D	24F	SPT 5, 7, 11 N = 18	
		3.5					3.45	
CH	Silty CLAY; high plasticity, mottled yellow grey, with fine to coarse sand	4.0			D	24G		
		4.5						
		5.0						
		5.5						
CH	Silty CLAY; high plasticity, mottled orange grey, with fine to coarse sand, with extremeley weathered rock bands			VSt.-H	D	24H		
	GRANITE; extremely weathered, extremely low strength, orange brown, with clay bands	6.0	D					

End of Borehole (BH24) @ 6.0m

Logged By: NM/DR

Registration No.: S16-195
Project/Location: Geotechnical Investigation - Proposed Meat Processing Facility, TEYS Bomen Plant, Dampier Street, Wagga Wagga, NSW
Client: TEYS Australia Pty Ltd - Wagga Wagga, NSW

Scale: As shown

Dry on completion

AITKEN ROWE TESTING LABORATORIES PTY LTD

LOG SYMBOLS

LOG COLUMN	SYMBOLS	DEFINITION
Groundwater Record	▼	Standing water level. Time delay following completion of drilling may be shown.
	▶	Groundwater seepage into borehole or excavation noted during drilling or excavation.
Samples	**D**	Small disturbed bag sample taken between the depths indicated by lines.
	B	Bulk disturbed sample taken between the depths indicated by lines.
	U	Undisturbed 50mm diameter tube sample taken between the depths indicated by lines
Field Tests	**N=17 4, 7, 10**	Standard Penetration Test (S.P.T.) performed between depths indicated by lines. Individual figures show blows per 150mm penetration driven by SPT hammer.
	N_c 5 7 3	Dynamic Cone Penetration Test performed between depths indicated by lines. Individual figures show blows per 100mm penetration for 60 degree solid cone driven by 9 Kg hammer.
Moisture Condition (Cohesive Soils) (Cohensionless Soils)	**MC>PL**	Moisture content estimated to be greater than plastic limit.
	MC=PL	Moisture content estimated to be approx. equal to plastic limit.
	MC<PL	Moisture content estimated to be less than plastic limit.
	D	DRY – runs freely through fingers.
	M	MOIST – does not run freely but no free water visible on soil surface.
	W	WET – free water visible on soil surface.
Consistency (Cohesive Soils)	**VS**	VERY SOFT – unconfined compressive strength less than 25kPa.
	S	SOFT – unconfined compressive strength 25-50 kPa.
	F	FIRM – unconfined compressive strength 50-100kPa.
	St.	STIFF – unconfined compressive strength 100-200kPa.
	VSt.	VERY STIFF – unconfined compressive strength 200 – 400kPa.
	H	HARD – unconfined compressive strength greater than 400kPa.

Relative Density (Cohensionless Soils)		**Description**	**Density Index Range % S.P.T.**	**'N' Value Range Blows/300mm**
	VL	VERY LOOSE	<15	0-4
	L	LOOSE	15-35	4-10
	MD	MEDIUM DENSE	35-65	10-30
	D	DENSE	65-85	30-50
	VD	VERY DENSE	>85	> 50

Hand Penetrometer Readings	**300 250 280**	Numbers indicate individual test results in kPa on representative undisturbed material unless noted otherwise.
Laboratory Test	**L.S. %**	Linear Shrinkage (As per RTA Method T113)
	M.C. %	Field Moisture Content (As per Australian Standard AS1289.2.1.1 or RTA Method T120)
	I_{ss}	Shrink-Swell Index (As per Australian Standard AS1289.7.1.1)
Remarks	**'V' bit**	Hardened steel 'V' shaped bit.
	'TC' bit	Tungsten Carbide wing bit.
	T^{60}	Penetration of auger string in mm under static load of rig rear axle without rotation of augers.

APPENDIX C
LABORATORY TEST REPORTS AS RECEIVED FROM ENVIROLAB

12 Ashley Street, Chatswood, NSW 2067
tel: +61 2 9910 6200

email: sydney@envirolab.com.au
envirolab.com.au

Envirolab Services Pty Ltd - Sydney | ABN 37 112 535 645

CERTIFICATE OF ANALYSIS 147818

Client:

Aitken Rowe Testing Laboratories Pty Ltd
4/2 Riedell St
Wagga Wagga
NSW 2650

Attention: Nathan McLaren

Sample log in details:

Your Reference:	**S16-195 TEYS**		
No. of samples:	40 soils		
Date samples received / completed instructions received	02/06/16	/	02/06/16

Analysis Details:

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	9/06/16	/	7/06/16
Date of Preliminary Report:	Not Issued		

NATA accreditation number 2901. This document shall not be reproduced except in full.
Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Jacinta Hurst
Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	147818-1	147818-2	147818-3	147818-4	147818-5
Your Reference	---------- -	1A	2A	3A	4A	5A
Depth	----------	0-0.5	0-0.5	0.2-0.7	0-0.5	0-0.5
Date Sampled		4/05/2016	4/05/2016	4/05/2016	4/05/2016	5/05/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
Date analysed	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	106	103	95	103	91

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	147818-6	147818-7	147818-8	147818-9	147818-10
Your Reference	---------- -	6A	7A	8A	9A	10A
Depth	----------	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Date Sampled		5/05/2016	5/05/2016	6/05/2016	6/05/2016	6/05/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
Date analysed	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	104	101	103	102	103

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	147818-11	147818-12	147818-13	147818-14	147818-15
Your Reference	---------- -	11A	16B	17B	18C	19A
Depth	----------	0-0.5	0.3-0.8	0.2-0.7	0.3-0.8	0-0.5
Date Sampled		6/05/2016	11/05/2016	6/05/2016	11/05/2016	11/05/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
Date analysed	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
TRHC$_6$ - C$_9$	mg/kg	<25	<25	<25	<25	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25	<25	<25	<25	<25
vTPHC$_6$ - C$_{10}$ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	106	105	98	72	105

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	147818-16	147818-17	147818-18	147818-19	147818-20
Your Reference	---------- -	20A	21A	22A	23A	24A
Depth	----------	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Date Sampled		11/05/2016	18/05/2016	18/05/2016	18/05/2016	18/05/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
Date analysed	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
TRHC$_6$ - C$_9$	mg/kg	<25	<25	<25	<25	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25	<25	<25	<25	<25
vTPHC$_6$ - C$_{10}$ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	103	102	97	100	96

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	147818-1	147818-2	147818-3	147818-4	147818-5
Your Reference	---------- -	1A	2A	3A	4A	5A
Depth	----------	0-0.5	0-0.5	0.2-0.7	0-0.5	0-0.5
Date Sampled		4/05/2016	4/05/2016	4/05/2016	4/05/2016	5/05/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	3/06/2016	3/06/2016	3/06/2016	3/06/2016	3/06/2016
Date analysed	-	03/06/2016	03/06/2016	04/06/2016	04/06/2016	04/06/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	82	81	80	82	80

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	147818-6	147818-7	147818-8	147818-9	147818-10
Your Reference	---------- -	6A	7A	8A	9A	10A
Depth	----------	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Date Sampled		5/05/2016	5/05/2016	6/05/2016	6/05/2016	6/05/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	3/06/2016	3/06/2016	3/06/2016	3/06/2016	3/06/2016
Date analysed	-	04/06/2016	04/06/2016	04/06/2016	04/06/2016	04/06/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	81	80	80	80	80

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	147818-11	147818-12	147818-13	147818-14	147818-15
Your Reference	---------- -	11A	16B	17B	18C	19A
Depth	----------	0-0.5	0.3-0.8	0.2-0.7	0.3-0.8	0-0.5
Date Sampled		6/05/2016	11/05/2016	6/05/2016	11/05/2016	11/05/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	3/06/2016	3/06/2016	3/06/2016	3/06/2016	3/06/2016
Date analysed	-	04/06/2016	04/06/2016	04/06/2016	04/06/2016	04/06/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	79	79	79	80	81

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	147818-16	147818-17	147818-18	147818-19	147818-20
Your Reference	---------- -	20A	21A	22A	23A	24A
Depth	----------	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Date Sampled		11/05/2016	18/05/2016	18/05/2016	18/05/2016	18/05/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	3/06/2016	3/06/2016	3/06/2016	3/06/2016	3/06/2016
Date analysed	-	04/06/2016	04/06/2016	04/06/2016	04/06/2016	04/06/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	79	80	80	78	79

PAHs in Soil Our Reference: Your Reference	UNITS ---------- -	147818-1 1A	147818-2 2A	147818-3 3A	147818-4 4A	147818-5 5A
Depth	----------	0-0.5	0-0.5	0.2-0.7	0-0.5	0-0.5
Date Sampled		4/05/2016	4/05/2016	4/05/2016	4/05/2016	5/05/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	3/06/2016	3/06/2016	3/06/2016	3/06/2016	3/06/2016
Date analysed	-	3/06/2016	3/06/2016	3/06/2016	3/06/2016	3/06/2016
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	94	97	95	98	94

PAHs in Soil Our Reference: Your Reference	UNITS ---------- -	147818-6 6A	147818-7 7A	147818-8 8A	147818-9 9A	147818-10 10A
Depth	----------	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Date Sampled		5/05/2016	5/05/2016	6/05/2016	6/05/2016	6/05/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	3/06/2016	3/06/2016	3/06/2016	3/06/2016	3/06/2016
Date analysed	-	3/06/2016	3/06/2016	3/06/2016	3/06/2016	3/06/2016
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	98	97	98	99	100

PAHs in Soil Our Reference: Your Reference	UNITS ---------- -	147818-11 11A	147818-12 16B	147818-13 17B	147818-14 18C	147818-15 19A
Depth	----------	0-0.5	0.3-0.8	0.2-0.7	0.3-0.8	0-0.5
Date Sampled		6/05/2016	11/05/2016	6/05/2016	11/05/2016	11/05/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	3/06/2016	3/06/2016	3/06/2016	3/06/2016	3/06/2016
Date analysed	-	3/06/2016	3/06/2016	3/06/2016	3/06/2016	3/06/2016
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	96	96	94	96	97

PAHs in Soil Our Reference: Your Reference	UNITS ---------- -	147818-16 20A	147818-17 21A	147818-18 22A	147818-19 23A	147818-20 24A
Depth	----------	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Date Sampled		11/05/2016	18/05/2016	18/05/2016	18/05/2016	18/05/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	3/06/2016	3/06/2016	3/06/2016	3/06/2016	3/06/2016
Date analysed	-	3/06/2016	3/06/2016	3/06/2016	3/06/2016	3/06/2016
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	0.48	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	96	97	99	96	93

Organochlorine Pesticides in soil						
Our Reference:	UNITS	147818-1	147818-2	147818-3	147818-4	147818-5
Your Reference	----------	1A	2A	3A	4A	5A
	-					
Depth	----------	0-0.5	0-0.5	0.2-0.7	0-0.5	0-0.5
Date Sampled		4/05/2016	4/05/2016	4/05/2016	4/05/2016	5/05/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
Date analysed	-	04/06/2016	04/06/2016	04/06/2016	04/06/2016	04/06/2016
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	90	89	88	88	88

Organochlorine Pesticides in soil						
Our Reference:	UNITS	147818-6	147818-7	147818-8	147818-9	147818-10
Your Reference	----------	6A	7A	8A	9A	10A
	-					
Depth	----------	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Date Sampled		5/05/2016	5/05/2016	6/05/2016	6/05/2016	6/05/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
Date analysed	-	04/06/2016	04/06/2016	04/06/2016	04/06/2016	04/06/2016
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	89	87	87	87	88

Organochlorine Pesticides in soil						
Our Reference:	UNITS	147818-11	147818-12	147818-13	147818-14	147818-15
Your Reference	----------	11A	16B	17B	18C	19A
	-					
Depth	----------	0-0.5	0.3-0.8	0.2-0.7	0.3-0.8	0-0.5
Date Sampled		6/05/2016	11/05/2016	6/05/2016	11/05/2016	11/05/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
Date analysed	-	04/06/2016	04/06/2016	04/06/2016	04/06/2016	04/06/2016
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	88	87	87	87	88

Organochlorine Pesticides in soil						
Our Reference:	UNITS	147818-16	147818-17	147818-18	147818-19	147818-20
Your Reference	----------	20A	21A	22A	23A	24A
	-					
Depth	----------	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Date Sampled		11/05/2016	18/05/2016	18/05/2016	18/05/2016	18/05/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
Date analysed	-	04/06/2016	04/06/2016	04/06/2016	04/06/2016	04/06/2016
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	86	86	87	85	86

Organophosphorus Pesticides						
Our Reference:	UNITS	147818-1	147818-2	147818-3	147818-4	147818-5
Your Reference	---------- -	1A	2A	3A	4A	5A
Depth	----------	0-0.5	0-0.5	0.2-0.7	0-0.5	0-0.5
Date Sampled		4/05/2016	4/05/2016	4/05/2016	4/05/2016	5/05/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
Date analysed	-	04/06/2016	04/06/2016	04/06/2016	04/06/2016	04/06/2016
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	90	89	88	88	88

Organophosphorus Pesticides						
Our Reference:	UNITS	147818-6	147818-7	147818-8	147818-9	147818-10
Your Reference	---------- -	6A	7A	8A	9A	10A
Depth	----------	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Date Sampled		5/05/2016	5/05/2016	6/05/2016	6/05/2016	6/05/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
Date analysed	-	04/06/2016	04/06/2016	04/06/2016	04/06/2016	04/06/2016
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	89	87	87	87	88

Organophosphorus Pesticides						
Our Reference:	UNITS	147818-11	147818-12	147818-13	147818-14	147818-15
Your Reference	---------- -	11A	16B	17B	18C	19A
Depth	----------	0-0.5	0.3-0.8	0.2-0.7	0.3-0.8	0-0.5
Date Sampled		6/05/2016	11/05/2016	6/05/2016	11/05/2016	11/05/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
Date analysed	-	04/06/2016	04/06/2016	04/06/2016	04/06/2016	04/06/2016
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	88	87	87	87	88

Organophosphorus Pesticides						
Our Reference:	UNITS	147818-16	147818-17	147818-18	147818-19	147818-20
Your Reference	---------- -	20A	21A	22A	23A	24A
Depth	----------	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Date Sampled		11/05/2016	18/05/2016	18/05/2016	18/05/2016	18/05/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
Date analysed	-	04/06/2016	04/06/2016	04/06/2016	04/06/2016	04/06/2016
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	86	86	87	85	86

PCBs in Soil						
Our Reference:	UNITS	147818-1	147818-2	147818-3	147818-4	147818-5
Your Reference	----------	1A	2A	3A	4A	5A
Depth	- ----------	0-0.5	0-0.5	0.2-0.7	0-0.5	0-0.5
Date Sampled		4/05/2016	4/05/2016	4/05/2016	4/05/2016	5/05/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
Date analysed	-	04/06/2016	04/06/2016	04/06/2016	04/06/2016	04/06/2016
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	90	89	88	88	88

PCBs in Soil						
Our Reference:	UNITS	147818-6	147818-7	147818-8	147818-9	147818-10
Your Reference	----------	6A	7A	8A	9A	10A
Depth	- ----------	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Date Sampled		5/05/2016	5/05/2016	6/05/2016	6/05/2016	6/05/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
Date analysed	-	04/06/2016	04/06/2016	04/06/2016	04/06/2016	04/06/2016
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	89	87	87	87	88

PCBs in Soil Our Reference: Your Reference	UNITS ----------	147818-11 11A	147818-12 16B	147818-13 17B	147818-14 18C	147818-15 19A
Depth	-	0-0.5	0.3-0.8	0.2-0.7	0.3-0.8	0-0.5
Date Sampled	----------	6/05/2016	11/05/2016	6/05/2016	11/05/2016	11/05/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
Date analysed	-	04/06/2016	04/06/2016	04/06/2016	04/06/2016	04/06/2016
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	88	87	87	87	88

PCBs in Soil Our Reference: Your Reference	UNITS ----------	147818-16 20A	147818-17 21A	147818-18 22A	147818-19 23A	147818-20 24A
Depth	-	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Date Sampled	----------	11/05/2016	18/05/2016	18/05/2016	18/05/2016	18/05/2016
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
Date analysed	-	04/06/2016	04/06/2016	04/06/2016	04/06/2016	04/06/2016
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	86	86	87	85	86

Acid Extractable metals in soil						
Our Reference:	UNITS	147818-1	147818-2	147818-3	147818-4	147818-5
Your Reference	----------	1A	2A	3A	4A	5A
Depth	----------	0-0.5	0-0.5	0.2-0.7	0-0.5	0-0.5
Date Sampled		4/05/2016	4/05/2016	4/05/2016	4/05/2016	5/05/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
Date analysed	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
Arsenic	mg/kg	4	5	<4	6	4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	25	29	33	28	27
Copper	mg/kg	9	8	10	9	12
Lead	mg/kg	9	9	10	8	39
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	8	6	8	7	9
Zinc	mg/kg	18	20	18	16	39

Acid Extractable metals in soil						
Our Reference:	UNITS	147818-6	147818-7	147818-8	147818-9	147818-10
Your Reference	----------	6A	7A	8A	9A	10A
Depth	----------	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Date Sampled		5/05/2016	5/05/2016	6/05/2016	6/05/2016	6/05/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
Date analysed	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
Arsenic	mg/kg	4	4	5	<4	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	27	26	30	26	34
Copper	mg/kg	10	11	11	10	13
Lead	mg/kg	17	14	13	12	26
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	8	9	9	7	9
Zinc	mg/kg	30	35	27	30	38

Acid Extractable metals in soil						
Our Reference:	UNITS	147818-11	147818-12	147818-13	147818-14	147818-15
Your Reference	----------	11A	16B	17B	18C	19A
Depth	----------	0-0.5	0.3-0.8	0.2-0.7	0.3-0.8	0-0.5
Date Sampled		6/05/2016	11/05/2016	6/05/2016	11/05/2016	11/05/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
Date analysed	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
Arsenic	mg/kg	4	6	4	6	4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	23	21	24	28	21
Copper	mg/kg	15	7	8	10	8
Lead	mg/kg	46	7	8	9	9
Mercury	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	8	7	6	8	6
Zinc	mg/kg	97	24	14	16	33

Acid Extractable metals in soil						
Our Reference:	UNITS	147818-16	147818-17	147818-18	147818-19	147818-20
Your Reference	----------	20A	21A	22A	23A	24A
Depth	----------	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Date Sampled		11/05/2016	18/05/2016	18/05/2016	18/05/2016	18/05/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
Date analysed	-	03/06/2016	03/06/2016	03/06/2016	03/06/2016	03/06/2016
Arsenic	mg/kg	4	8	8	5	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	19	26	25	27	23
Copper	mg/kg	8	13	11	9	8
Lead	mg/kg	7	13	11	12	9
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	7	10	9	7	6
Zinc	mg/kg	19	53	33	13	46

Moisture Our Reference: Your Reference	UNITS ----------	147818-1 1A	147818-2 2A	147818-3 3A	147818-4 4A	147818-5 5A
	-					
Depth	----------	0-0.5	0-0.5	0.2-0.7	0-0.5	0-0.5
Date Sampled		4/05/2016	4/05/2016	4/05/2016	4/05/2016	5/05/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	3/06/2016	3/06/2016	3/06/2016	3/06/2016	3/06/2016
Date analysed	-	3/06/2016	3/06/2016	3/06/2016	3/06/2016	3/06/2016
Moisture	%	6.3	6.8	39	5.1	6.2

Moisture Our Reference: Your Reference	UNITS ----------	147818-6 6A	147818-7 7A	147818-8 8A	147818-9 9A	147818-10 10A
	-					
Depth	----------	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Date Sampled		5/05/2016	5/05/2016	6/05/2016	6/05/2016	6/05/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	3/06/2016	3/06/2016	3/06/2016	3/06/2016	3/06/2016
Date analysed	-	3/06/2016	3/06/2016	3/06/2016	3/06/2016	3/06/2016
Moisture	%	5.4	7.2	6.8	6.8	6.7

Moisture Our Reference: Your Reference	UNITS ----------	147818-11 11A	147818-12 16B	147818-13 17B	147818-14 18C	147818-15 19A
	-					
Depth	----------	0-0.5	0.3-0.8	0.2-0.7	0.3-0.8	0-0.5
Date Sampled		6/05/2016	11/05/2016	6/05/2016	11/05/2016	11/05/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	3/06/2016	3/06/2016	3/06/2016	3/06/2016	3/06/2016
Date analysed	-	3/06/2016	3/06/2016	3/06/2016	3/06/2016	3/06/2016
Moisture	%	7.4	6.0	7.4	6.9	9.0

Moisture Our Reference: Your Reference	UNITS ----------	147818-16 20A	147818-17 21A	147818-18 22A	147818-19 23A	147818-20 24A
	-					
Depth	----------	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Date Sampled		11/05/2016	18/05/2016	18/05/2016	18/05/2016	18/05/2016
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	3/06/2016	3/06/2016	3/06/2016	3/06/2016	3/06/2016
Date analysed	-	3/06/2016	3/06/2016	3/06/2016	3/06/2016	3/06/2016
Moisture	%	12	14	13	12	10

Asbestos ID - soils						
Our Reference:	UNITS	147818-21	147818-22	147818-23	147818-24	147818-25
Your Reference	---------- -	1F	2G	3F	4G	5G
Depth	----------	3.6-3.9	5.5-5.8	4.6-5.0	4.9-5.3	4.5-5.0
Date Sampled		4/05/2016	4/05/2016	4/05/2016	4/05/2016	5/05/2016
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	7/06/2016	7/06/2016	7/06/2016	7/06/2016	7/06/2016
Sample mass tested	g	Approx. 35g	Approx. 40g	Approx. 60g	Approx. 35g	Approx. 35g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference:	UNITS	147818-26	147818-27	147818-28	147818-29	147818-30
Your Reference	---------- -	6E	7D	8F	9H	10E
Depth	----------	3.9-4.9	2.3-3.0	3.7-4.4	5.0-5.5	2.9-3.5
Date Sampled		5/05/2016	5/05/2016	6/05/2016	6/05/2016	6/05/2016
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	7/06/2016	7/06/2016	7/06/2016	7/06/2016	7/06/2016
Sample mass tested	g	Approx. 35g	Approx. 35g	Approx. 40g	Approx. 40g	Approx. 30g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference:	UNITS	147818-31	147818-32	147818-33	147818-34	147818-35
Your Reference	---------- -	11G	16G	17F	18F	19H
Depth	----------	4.7-5.9	3.6-4.5	3.0-4.5	2.2-3.0	3.5-4.5
Date Sampled		6/05/2016	11/05/2016	6/05/2016	11/06/2016	11/06/2016
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	7/06/2016	7/06/2016	7/06/2016	7/06/2016	7/06/2016
Sample mass tested	g	Approx. 45g	Approx. 40g	Approx. 30g	Approx. 35g	Approx. 35g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference:	UNITS	147818-36	147818-37	147818-38	147818-39	147818-40
Your Reference	---------- -	20F	21F	22F	23D	24G
Depth	----------	3.6-4.5	4.1-4.5	4.9-5.2	3.5-3.8	4.1-4.5
Date Sampled		11/06/2016	18/05/2016	18/05/2016	18/05/2016	18/05/2016
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	7/06/2016	7/06/2016	7/06/2016	7/06/2016	7/06/2016
Sample mass tested	g	Approx. 35g	Approx. 50g	Approx. 35g	Approx. 40g	Approx. 45g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'TEQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'TEQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'TEQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			03/06/2016	147818-1	03/06/2016 || 03/06/2016	LCS-2	03/06/2016
Date analysed	-			03/06/2016	147818-1	03/06/2016 || 03/06/2016	LCS-2	03/06/2016
TRHC$_6$ - C$_9$	mg/kg	25	Org-016	<25	147818-1	<25 || <25	LCS-2	102%
TRHC$_6$ - C$_{10}$	mg/kg	25	Org-016	<25	147818-1	<25 || <25	LCS-2	102%
Benzene	mg/kg	0.2	Org-016	<0.2	147818-1	<0.2 || <0.2	LCS-2	88%
Toluene	mg/kg	0.5	Org-016	<0.5	147818-1	<0.5 || <0.5	LCS-2	95%
Ethylbenzene	mg/kg	1	Org-016	<1	147818-1	<1 || <1	LCS-2	103%
m+p-xylene	mg/kg	2	Org-016	<2	147818-1	<2 || <2	LCS-2	111%
o-Xylene	mg/kg	1	Org-016	<1	147818-1	<1 || <1	LCS-2	101%
naphthalene	mg/kg	1	Org-014	<1	147818-1	<1 || <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	101	147818-1	106 || 96 || RPD: 10	LCS-2	106%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			03/06/2016	147818-1	3/06/2016 || 3/06/2016	LCS-2	03/06/2016
Date analysed	-			03/06/2016	147818-1	03/06/2016 || 03/06/2016	LCS-2	03/06/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	50	Org-003	<50	147818-1	<50 || <50	LCS-2	80%
TRHC$_{15}$ - C$_{28}$	mg/kg	100	Org-003	<100	147818-1	<100 || <100	LCS-2	114%
TRHC$_{29}$ - C$_{36}$	mg/kg	100	Org-003	<100	147818-1	<100 || <100	LCS-2	106%
TRH>C$_{10}$-C$_{16}$	mg/kg	50	Org-003	<50	147818-1	<50 || <50	LCS-2	80%
TRH>C$_{16}$-C$_{34}$	mg/kg	100	Org-003	<100	147818-1	<100 || <100	LCS-2	114%
TRH>C$_{34}$-C$_{40}$	mg/kg	100	Org-003	<100	147818-1	<100 || <100	LCS-2	106%
Surrogate o-Terphenyl	%		Org-003	84	147818-1	82 || 81 || RPD: 1	LCS-2	106%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			3/06/2016	147818-1	3/06/2016 || 3/06/2016	LCS-2	3/06/2016
Date analysed	-			3/06/2016	147818-1	3/06/2016 || 3/06/2016	LCS-2	3/06/2016
Naphthalene	mg/kg	0.1	Org-012	<0.1	147818-1	<0.1 || <0.1	LCS-2	112%
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012	<0.1	147818-1	<0.1 || <0.1	LCS-2	109%
Phenanthrene	mg/kg	0.1	Org-012	<0.1	147818-1	<0.1 || <0.1	LCS-2	116%
Anthracene	mg/kg	0.1	Org-012	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	147818-1	<0.1 || <0.1	LCS-2	113%
Pyrene	mg/kg	0.1	Org-012	<0.1	147818-1	<0.1 || <0.1	LCS-2	105%
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012	<0.1	147818-1	<0.1 || <0.1	LCS-2	93%
Benzo(b,j +k)fluoranthene	mg/kg	0.2	Org-012	<0.2	147818-1	<0.2 || <0.2	[NR]	[NR]

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	147818-1	<0.05 || <0.05	LCS-2	121%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012	102	147818-1	94 || 94 || RPD: 0	LCS-2	128%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			03/06/2016	147818-1	03/06/2016 || 03/06/2016	LCS-2	03/06/2016
Date analysed	-			04/06/2016	147818-1	04/06/2016 || 04/06/2016	LCS-2	04/06/2016
HCB	mg/kg	0.1	Org-005	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	147818-1	<0.1 || <0.1	LCS-2	71%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	147818-1	<0.1 || <0.1	LCS-2	95%
Heptachlor	mg/kg	0.1	Org-005	<0.1	147818-1	<0.1 || <0.1	LCS-2	79%
delta-BHC	mg/kg	0.1	Org-005	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	147818-1	<0.1 || <0.1	LCS-2	93%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	147818-1	<0.1 || <0.1	LCS-2	83%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	147818-1	<0.1 || <0.1	LCS-2	85%
Dieldrin	mg/kg	0.1	Org-005	<0.1	147818-1	<0.1 || <0.1	LCS-2	90%
Endrin	mg/kg	0.1	Org-005	<0.1	147818-1	<0.1 || <0.1	LCS-2	101%
pp-DDD	mg/kg	0.1	Org-005	<0.1	147818-1	<0.1 || <0.1	LCS-2	85%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	147818-1	<0.1 || <0.1	LCS-2	93%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-005	86	147818-1	90 || 89 || RPD: 1	LCS-2	104%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			03/06/2016	147818-1	03/06/2016 || 03/06/2016	LCS-2	03/06/2016
Date analysed	-			04/06/2016	147818-1	04/06/2016 || 04/06/2016	LCS-2	04/06/2016
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	147818-1	<0.1 || <0.1	LCS-2	94%
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
Diazinon	mg/kg	0.1	Org-008	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	147818-1	<0.1 || <0.1	LCS-2	88%
Dimethoate	mg/kg	0.1	Org-008	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	147818-1	<0.1 || <0.1	LCS-2	88%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	147818-1	<0.1 || <0.1	LCS-2	90%
Malathion	mg/kg	0.1	Org-008	<0.1	147818-1	<0.1 || <0.1	LCS-2	84%
Parathion	mg/kg	0.1	Org-008	<0.1	147818-1	<0.1 || <0.1	LCS-2	98%
Ronnel	mg/kg	0.1	Org-008	<0.1	147818-1	<0.1 || <0.1	LCS-2	99%
Surrogate TCMX	%		Org-008	86	147818-1	90 || 89 || RPD: 1	LCS-2	87%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			03/06/2016	147818-1	03/06/2016 || 03/06/2016	LCS-2	03/06/2016
Date analysed	-			04/06/2016	147818-1	04/06/2016 || 04/06/2016	LCS-2	04/06/2016
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	147818-1	<0.1 || <0.1	LCS-2	123%
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	147818-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-006	86	147818-1	90 || 89 || RPD: 1	LCS-2	87%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			03/06/2016	147818-1	03/06/2016 || 03/06/2016	LCS-2	03/06/2016
Date analysed	-			03/06/2016	147818-1	03/06/2016 || 03/06/2016	LCS-2	03/06/2016
Arsenic	mg/kg	4	Metals-020	<4	147818-1	4 || 5 || RPD: 22	LCS-2	110%
Cadmium	mg/kg	0.4	Metals-020	<0.4	147818-1	<0.4 || <0.4	LCS-2	106%
Chromium	mg/kg	1	Metals-020	<1	147818-1	25 || 26 || RPD: 4	LCS-2	105%
Copper	mg/kg	1	Metals-020	<1	147818-1	9 || 9 || RPD: 0	LCS-2	107%
Lead	mg/kg	1	Metals-020	<1	147818-1	9 || 9 || RPD: 0	LCS-2	101%
Mercury	mg/kg	0.1	Metals-021	<0.1	147818-1	<0.1 || <0.1	LCS-2	98%
Nickel	mg/kg	1	Metals-020	<1	147818-1	8 || 8 || RPD: 0	LCS-2	101%
Zinc	mg/kg	1	Metals-020	<1	147818-1	18 || 18 || RPD: 0	LCS-2	102%

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	147818-11	03/06/2016 || 03/06/2016	147818-2	03/06/2016
Date analysed	-	147818-11	03/06/2016 || 03/06/2016	147818-2	03/06/2016
$TRHC_6$ - C_9	mg/kg	147818-11	<25 || <25	147818-2	92%
$TRHC_6$ - C_{10}	mg/kg	147818-11	<25 || <25	147818-2	92%
Benzene	mg/kg	147818-11	<0.2 || <0.2	147818-2	80%
Toluene	mg/kg	147818-11	<0.5 || <0.5	147818-2	86%
Ethylbenzene	mg/kg	147818-11	<1 || <1	147818-2	94%
m+p-xylene	mg/kg	147818-11	<2 || <2	147818-2	101%
o-Xylene	mg/kg	147818-11	<1 || <1	147818-2	92%
naphthalene	mg/kg	147818-11	<1 || <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%	147818-11	106 || 94 || RPD: 12	147818-2	101%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	147818-11	3/06/2016 || 3/06/2016	147818-2	3/06/2016
Date analysed	-	147818-11	04/06/2016 || 04/06/2016	147818-2	04/06/2016
$TRHC_{10}$ - C_{14}	mg/kg	147818-11	<50 || <50	147818-2	107%
$TRHC_{15}$ - C_{28}	mg/kg	147818-11	<100 || <100	147818-2	120%
$TRHC_{29}$ - C_{36}	mg/kg	147818-11	<100 || <100	147818-2	113%
$TRH>C_{10}$-C_{16}	mg/kg	147818-11	<50 || <50	147818-2	107%
$TRH>C_{16}$-C_{34}	mg/kg	147818-11	<100 || <100	147818-2	120%
$TRH>C_{34}$-C_{40}	mg/kg	147818-11	<100 || <100	147818-2	113%
Surrogate o-Terphenyl	%	147818-11	79 || 79 || RPD: 0	147818-2	81%

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	147818-11	3/06/2016 || 3/06/2016	147818-2	3/06/2016
Date analysed	-	147818-11	3/06/2016 || 3/06/2016	147818-2	3/06/2016
Naphthalene	mg/kg	147818-11	<0.1 || <0.1	147818-2	105%
Acenaphthylene	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	147818-11	<0.1 || <0.1	147818-2	103%
Phenanthrene	mg/kg	147818-11	<0.1 || <0.1	147818-2	112%
Anthracene	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	147818-11	<0.1 || <0.1	147818-2	108%
Pyrene	mg/kg	147818-11	<0.1 || <0.1	147818-2	100%
Benzo(a)anthracene	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	147818-11	<0.1 || <0.1	147818-2	89%
Benzo(b,j+k)fluoranthene	mg/kg	147818-11	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	147818-11	<0.05 || <0.05	147818-2	111%
Indeno(1,2,3-c,d)pyrene	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	147818-11	96 || 98 || RPD: 2	147818-2	120%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	147818-11	03/06/2016 || 03/06/2016	147818-2	03/06/2016
Date analysed	-	147818-11	04/06/2016 || 04/06/2016	147818-2	04/06/2016
HCB	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	147818-11	<0.1 || <0.1	147818-2	84%
gamma-BHC	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	147818-11	<0.1 || <0.1	147818-2	95%
Heptachlor	mg/kg	147818-11	<0.1 || <0.1	147818-2	79%
delta-BHC	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	147818-11	<0.1 || <0.1	147818-2	93%
Heptachlor Epoxide	mg/kg	147818-11	<0.1 || <0.1	147818-2	66%
gamma-Chlordane	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	147818-11	<0.1 || <0.1	147818-2	84%
Dieldrin	mg/kg	147818-11	<0.1 || <0.1	147818-2	90%
Endrin	mg/kg	147818-11	<0.1 || <0.1	147818-2	100%
pp-DDD	mg/kg	147818-11	<0.1 || <0.1	147818-2	85%
Endosulfan II	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	147818-11	<0.1 || <0.1	147818-2	92%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Methoxychlor	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%	147818-11	88 || 86 || RPD: 2	147818-2	101%
QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	147818-11	03/06/2016 || 03/06/2016	147818-2	03/06/2016
Date analysed	-	147818-11	04/06/2016 || 04/06/2016	147818-2	04/06/2016
Azinphos-methyl (Guthion)	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
Bromophos-ethyl	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	147818-11	<0.1 || <0.1	147818-2	99%
Chlorpyriphos-methyl	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
Diazinon	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
Dichlorvos	mg/kg	147818-11	<0.1 || <0.1	147818-2	93%
Dimethoate	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	147818-11	<0.1 || <0.1	147818-2	105%
Fenitrothion	mg/kg	147818-11	<0.1 || <0.1	147818-2	92%
Malathion	mg/kg	147818-11	<0.1 || <0.1	147818-2	93%
Parathion	mg/kg	147818-11	<0.1 || <0.1	147818-2	100%
Ronnel	mg/kg	147818-11	<0.1 || <0.1	147818-2	104%
Surrogate TCMX	%	147818-11	88 || 86 || RPD: 2	147818-2	88%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	147818-11	03/06/2016 || 03/06/2016	147818-2	03/06/2016
Date analysed	-	147818-11	04/06/2016 || 04/06/2016	147818-2	04/06/2016
Aroclor 1016	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	147818-11	<0.1 || <0.1	147818-2	127%
Aroclor 1260	mg/kg	147818-11	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%	147818-11	88 || 86 || RPD: 2	147818-2	88%

Client Reference: S16-195 TEYS

QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	147818-11	03/06/2016 || 03/06/2016	147818-2	03/06/2016
Date analysed	-	147818-11	03/06/2016 || 03/06/2016	147818-2	03/06/2016
Arsenic	mg/kg	147818-11	4 || 4 || RPD: 0	147818-2	95%
Cadmium	mg/kg	147818-11	<0.4 || <0.4	147818-2	103%
Chromium	mg/kg	147818-11	23 || 25 || RPD: 8	147818-2	92%
Copper	mg/kg	147818-11	15 || 14 || RPD: 7	147818-2	105%
Lead	mg/kg	147818-11	46 || 40 || RPD: 14	147818-2	97%
Mercury	mg/kg	147818-11	0.1 || <0.1	147818-2	99%
Nickel	mg/kg	147818-11	8 || 8 || RPD: 0	147818-2	97%
Zinc	mg/kg	147818-11	97 || 88 || RPD: 10	147818-2	121%

Report Comments:

Asbestos: Excessive sample volumes were provided for asbestos analysis. A portion of the supplied samples were sub-sampled according to Envirolab procedures. We cannot guarantee that these sub-samples are indicative of the entire sample. Envirolab recommends supplying 40-50g (50mL) of sample in its own container as per AS4964-2004.

Note: Samples requested for asbestos testing were sub-sampled from bags provided by the client.

Asbestos ID was analysed by Approved Identifier:	Paul Ching
Asbestos ID was authorised by Approved Signatory:	Paul Ching

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NR: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.
Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.
Spikes for Physical and Aggregate Tests are not applicable.
For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

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

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

Appendix C – EPL variation

Licence Variation Summary

Licence - 2262

This Summary serves merely to highlight changes made to areas of this licence. Changes made to tables within the licence are indicated using underline (for additions) and Strikethrough (for deletions).
While changes to conditions are indicated under subheadings such as 'New condition', 'Old condition', 'Replaced by', and ' Removed condition.

The attached licence document contains all the changes made to this licence by the attached variation notice.

1 Administrative Conditions

What the licence authorises and regulates

Scheduled Activity	Fee Based Activity	Scale
General animal products production	General animal products production	> 100000 T annual production capacity

Environment Protection Licence

Licence - 2262

NSW EPA

Licence Details	
Number:	2262
Anniversary Date:	06-December

Licensee

TEYS AUSTRALIA SOUTHERN PROPERTY PTY LTD

PO BOX 166

WAGGA WAGGA NSW 2650

Premises

TEYS AUSTRALIA WAGGA WAGGA

DAMPIER ST

WAGGA WAGGA NSW 2650

Scheduled Activity

Livestock processing activities

Fee Based Activity	Scale
General animal products production	> 100000 T annual production capacity
Rendering or fat extraction	> 4000 T annual production capacity
Slaughtering or processing animals	> 30000 T annual processing capacity

Region

South West

Suites 7-8, Level 1 Griffith City Plaza, 130-140 Banna Avenue

GRIFFITH NSW 2680

Phone: (02) 6969 0700

Fax: (02) 6969 0710

PO Box 397 GRIFFITH

NSW 2680

Environment Protection Licence

Licence - 2262

Environment Protection Licence

Licence - 2262

Environment Protection Licence

Licence - 2262

NSW EPA

Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

Environment Protection Licence

Licence - 2262

The EPA publication "A Guide to Licensing" contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

TEYS AUSTRALIA SOUTHERN PROPERTY PTY LTD

PO BOX 166

WAGGA WAGGA NSW 2650

subject to the conditions which follow.

Environment Protection Licence

Licence - 2262

1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Livestock processing activities	General animal products production	> 100000 T annual production capacity
Livestock processing activities	Rendering or fat extraction	> 4000 T annual production capacity
Livestock processing activities	Slaughtering or processing animals	> 30000 T annual processing capacity

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
TEYS AUSTRALIA WAGGA WAGGA
DAMPIER ST
WAGGA WAGGA
NSW 2650
LOT 6 DP 614169, LOT 1 DP 700113, LOT 2 DP 700113, LOT 4 DP 700113, LOT 11 DP 814225, LOT 1 DP 840624

A3 Information supplied to the EPA

A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:
a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

Environment Protection Licence

Licence - 2262

NSW EPA

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

P1.1 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

Air

EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
5		Biogas Flare	Biogas flare associated with the wastewater treatment system
13	Boiler stack	Boiler stack	Emission point for bioler utilising biogas

P1.2 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

P1.3 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Discharge to utilisation area. Effluent quality monitoring	Discharge to utilisation area. Effluent quality monitoring	Spray irrigation to utilisation area labelled "Licensed Irrigation Area" on Drawing 1232 titled "Wagga Wagga Abattoir Storm Water & Sewerage Discharge" submitted to the EPA with Licence Information Form on 9/12/99.
4	Soil monitoring		CFA High irrigation area as shown on map attached to licence variation application dated 9 December 2011. Four representaive samples to be collected.
6	Soil Monitoring		CFA Low irrigation area as shown on map attached to licence variation application dated 9 December 2011. Four representative samples to be collected.
7	Monitoring of effluent discharged to Lot 100 DP 1095889, 59 Hillary Street, North Wagga Wagga for the purposes of turf growing.	Monitoring of effluent discharged to Lot 100 DP 1095889, 59 Hillary Street, North Wagga Wagga for the purposes of turf growing.	Discharge point at the boundary of the Teys premises prior to discharge to Lot 100 DP 1095889 59 Hillary Street, North Wagga Wagga
8	Monitoring of effluent volume	Monitoring of effluent volume	Monitoring of effluent volume for CFA Low irrigation area

9	Piezometer 1 CFA High Irrigation Area	Piezometer 1 CFA High Irrigation Area
10	Piezometer 5 CFA High Irrigation Area	Piezometer 5 CFA High Irrigation Area
11	Piezometer 7 CFA Low irrigation area	Piezometer 7 CFA Low Irrigation Area
12	Piezometer 8 CFA Low Irrigation Area	Piezometer 8 CFA Low Irrigation Area

3 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Concentration limits

L2.1 For each monitoring/discharge point or utilisation area specified in the table\s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L2.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L2.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\s.

L2.4 Air Concentration Limits

POINT 5

Pollutant	Units of measure	100 percentile concentration limit	Reference conditions	Oxygen correction	Averaging period
Volatile organic compounds	milligrams per cubic metre	40			
Smoke Emissions	Visible	0			
Hydrogen Sulfide	milligrams per cubic metre	5			

POINT 13

Pollutant	Units of measure	100 percentile concentration limit	Reference conditions	Oxygen correction	Averaging period
Nitrogen Oxides	milligrams per cubic metre	350			

Hydrogen Sulfide	milligrams per cubic metre	5

L2.5 Water and/or Land Concentration Limits

POINT 1

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Biochemical oxygen demand	milligrams per litre				200

POINT 7

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
BOD	milligrams per litre				200
Conductivity	microsiemens per centimetre				1500
Total Phosphorus - unfiltered sample	milligrams per litre				30

L3 Volume and mass limits

L3.1 For each discharge point or utilisation area specified below (by a point number), the volume/mass of:
a) liquids discharged to water; or;
b) solids or liquids applied to the area;
must not exceed the volume/mass limit specified for that discharge point or area.

Point	Unit of Measure	Volume/Mass Limit
7	megalitres per year	120
8	megalitres per year	300

L4 Noise limits

L4.1 The licensee shall undertake all activities at the premises to ensure that the noise generated does not exceed the noise limits specified in the table below at the most affected residential premises.

Day LAeq(15 min)	Evening LAeq(15 min)	Night LAeq(15 min)	Night LA1(1 min)
37	37	35	45

Note: For the purpose of the condition above;
a) Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sunday and Public Holidays.
b) Evening is defined as the period 6pm to 10pm.
c) Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sunday and Public Holidays.

L4.2 For the purpose of assessment of noise impacts specified in condition L3.1 , noise from the development shall be
a) measured at the most affected point on or within the residential boundary for $L_{Aeq(15\ minute)}$ noise levels;
b) measured at 1m from the dwelling for $L_{A1(1\ minute)}$ noise levels;
c) measured at wind speeds up to $3ms^{-1}$ at 10 metres above ground level;
d) measured at temperature inversion conditions up to 3 Degrees Celsius per 100 metres; and
e) subject to the modification factors provided in Section 4 of the *New South Wales Industrial Noise Policy (DECC, 2000).*

L5 Potentially offensive odour

L5.1 No condition of this licence identifies a potentially offensive odour for the purposes of Section 129 of the Protection of the Environment Operations Act 1997.

L5.2 The licensee must not cause or permit the emission of offensive odour beyond the boundary of the premises.

4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.
This includes:
a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
a) must be maintained in a proper and efficient condition; and

b) must be operated in a proper and efficient manner.

O3 Dust

O3.1 The premises must be maintained and operated in a manner that minimises dust emissions from the premises.

O4 Effluent application to land

O4.1 Effluent application must not occur in a manner that causes surface runoff.

O4.2 Spray from effluent application must not drift beyond the boundary of the premises.

O4.3 Livestock access to any effluent application area must be denied during irrigation and until the applied effluent has dried.

O4.4 The licensee must retain the utilisation area.

O4.5 At least 14 days prior to a utilisation area being rendered unavailable for use, the EPA must be advised in writing of this intention.

O4.6 The quantity of effluent/solids applied to the utilisation area must not exceed the capacity of the area to effectively utilise the effluent/solids.

For the purpose of this condition, 'effectively utilise' includes the use of the effluent/solids for pasture or crop production, as well as the ability of the soil to absorb the nutrient, salt, hydraulic load and organic material.

O5 Emergency response

O5.1 The licensee must maintain, and implement as necessary, a current Pollution Incident Response Management Plan (PIRMP) for the premises. The licensee must keep the incident response plan on the premises at all times. The incident response plan must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. The licensee must develop a Pollution Incident Response Management Plan in accordance with the requirements in Part 5.7A of the Protection of the Environment Operations (POEO) Act 1997 and POEO regulations.

O6 Waste management

O6.1 If solids are removed from the premises, the licensee must record:
a) the date of removing the solids;
b) the estimated weight of the solids removed; and

c) the identity of the person removing the solids.

5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:
a) in a legible form, or in a form that can readily be reduced to a legible form;
b) kept for at least 4 years after the monitoring or event to which they relate took place; and
c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
a) the date(s) on which the sample was taken;
b) the time(s) at which the sample was collected;
c) the point at which the sample was taken; and
d) the name of the person who collected the sample.

M2 Requirement to monitor concentration of pollutants discharged

M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

M2.2 Water and/ or Land Monitoring Requirements

POINT 1

Pollutant	Units of measure	Frequency	Sampling Method
Biochemical oxygen demand	milligrams per litre	Monthly	Composite sample

POINT 4,6

Pollutant	Units of measure	Frequency	Sampling Method
Conductivity	deciSiemens per metre	Yearly	Composite sample
Exchangeable calcium	milligrams per kilogram	Yearly	Composite sample
Exchangeable magnesium	milligrams per kilogram	Yearly	Composite sample
Exchangeable potassium	milligrams per kilogram	Yearly	Composite sample

Exchangeable sodium	milligrams per kilogram	Yearly	Composite sample
Exchangeable sodium percentage	percent	Yearly	Composite sample
Extractable phosphorus	milligrams per kilogram	Yearly	Composite sample
Nitrate	milligrams per kilogram	Yearly	Composite sample
Nitrogen (total)	milligrams per kilogram	Yearly	Composite sample
pH	pH	Yearly	Composite sample
Phosphorus (total)	milligrams per kilogram	Yearly	Composite sample
Phosphorus Sorption Capacity	milligrams per kilogram	Yearly	Composite sample
Total organic carbon	milligrams per kilogram	Yearly	Composite sample

POINT 7

Pollutant	Units of measure	Frequency	Sampling Method
BOD	milligrams per litre	Monthly during discharge	Grab sample
Conductivity	microsiemens per centimetre	Monthly during discharge	Grab sample
Total Phosphorus - unfiltered sample	milligrams per litre	Monthly during discharge	Grab sample

POINT 9,10,11,12

Pollutant	Units of measure	Frequency	Sampling Method
Electrical conductivity	microsiemens per centimetre	Yearly during discharge	In situ
Nitrate	milligrams per litre	Yearly during discharge	Grab sample
pH	pH	Yearly during discharge	In situ
Standing Water Level	metres (Australian Height Datum)	Yearly during discharge	In situ

M3 Testing methods - concentration limits

M3.1 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

M4 Weather monitoring

M4.1 For each monitoring point specified in the table below the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The licensee must use the sampling method, units of measure, averaging period and sample at the frequency, specified opposite in the other

columns.

Parameter	Units of Measure	Frequency	Averaging Period	Sampling Method
Air temperature	°C	Continuous	1 hour	AM-4
Wind direction	°	Continuous	15 minute	AM-2 & AM-4
Wind speed	m/s	Continuous	15 minute	AM-2 & AM-4
Sigma theta	°	Continuous	15 minute	AM-2 & AM-4
Rainfall	mm	Continuous	15 minute	AM-4
Relative humidity	%	Continuous	1 hour	AM-4

M4.2 The licensee must establish a permanent meteorological station complying with the Approved methods for sampling and analysis and the Australian Standard AS2923 – 1987, at the facility.

The location of the site chosen for the station and details of equipment, measurement and maintenance/service procedures and schedules to be installed and maintained must be submitted in writing to the EPA and approved in writing by the EPA before any sampling or analysis is carried out. The meteorological monitoring station must be calibrated at least once every 12 months. The EPA is to be provided with the data on request in a Microsoft ® Office software compatible format.

M5 Recording of pollution complaints

M5.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M5.2 The record must include details of the following:
a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
d) the nature of the complaint;
e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.

M5.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M5.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M6 Telephone complaints line

M6.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M6.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M6.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

M7 Requirement to monitor volume or mass

M7.1 For each discharge point or utilisation area specified below, the licensee must monitor:
a) the volume of liquids discharged to water or applied to the area;
b) the mass of solids applied to the area;
c) the mass of pollutants emitted to the air;
at the frequency and using the method and units of measure, specified below.

POINT 7

Frequency	Unit of Measure	Sampling Method
Continuous during discharge	litres	Magnetic flow meter

POINT 8

Frequency	Unit of Measure	Sampling Method
Continuous during discharge	litres	Magnetic flow meter

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance - Licence Conditions,
4. a Statement of Compliance - Load based Fee,
5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
7. a Statement of Compliance - Environmental Management Systems and Practices.

At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee:
a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new

licensee is granted; and
b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA via eConnect *EPA* or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
a) the licence holder; or
b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R2 Notification of environmental harm

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
a) where this licence applies to premises, an event has occurred at the premises; or
b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA

within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:
a) the cause, time and duration of the event;
b) the type, volume and concentration of every pollutant discharged as a result of the event;
c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

7 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

8 Special Conditions

E1 Offsite Effluent Irrigation - Turf Farm

E1.1 Supply of effluent for the purposes of turf irrigation at Lot 100 DP 1095889, 59 Hillary Street, North Wagga Wagga must be undertaken in accordance with the requirements specified in the approved Environmental Management Plan required by condition 5C of DA11/0327.

E2 Special Dictionary

E2.1

Environment Protection Licence

Term	Licence Definition
CEC	Means cation exchange capacity
effluent	Means for the purpose of this licence waste water from collection or treatment systems associated with processing industries involving livestock, agriculture, wood, paper or food, that is conveyed from the place of generation by means of pipe, canal or other conventional irrigation method
ESP	Means exchangeable sodium percentage
ex	Means the exchangeable ion
FC	Means faecal coliforms expressed in colony forming units/100mL
feedlot pen	Means the pen(s) in which pigs are stocked for the purposes of feeding
holding pens	Means the pen(s) in which livestock are held whilst awaiting sale or routine handling
holding pond	Means the final pond at the end of the effluent collection / treatment system, from which effluent is pumped to the irrigation area.
kL	Means kilolitre
mequiv	Means milliequivalents as the ion
ML	Means megalitre
NH3 N	Means nitrogen as ammonia
NO3-N	Means nitrogen as nitrate
PSC	Means phosphorus sorption capacity
solids	Means any solids and sludges extracted from effluent, and any sludges, sediments and surface scums originating from the pondage systems
SWL	Means standing water level
TDS	Means total dissolved solids
TKN-N	Means total Kjeldahl nitrogen
TN	Means total nitrogen
TOC	Means total organic carbon
TP	Means total phosphorus
TRC	Means total residual chlorine
ug/L	Means micrograms per litre
WSA	Means water stable aggregates

Environment Protection Licence

Licence - 2262

Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales.*
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales.*
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environmen t Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methytene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 mo nths. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.

Environment Protection Licence

Licence - 2262

TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non-putrescible), special waste or hazardous waste

Mr David Cook

Environment Protection Authority

(By Delegation)

Date of this edition: 12-September-2000

Environment Protection Licence

Licence - 2262

End Notes

1	Licence varied by notice 1012904, issued on 14-May-2002, which came into effect on 14-May-2002.
2	Licence varied by notice 1046402, issued on 18-Apr-2005, which came into effect on 13-May-2005.
3	Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
4	Licence varied by notice 1095799, issued on 19-Dec-2008, which came into effect on 19-Dec-2008.
5	Licence varied by notice 1099353, issued on 09-Apr-2009, which came into effect on 09-Apr-2009.
6	Licence varied by notice 1104365, issued on 07-Aug-2009, which came into effect on 07-Aug-2009.
7	Licence varied by notice 1106808, issued on 20-Nov-2009, which came into effect on 20-Nov-2009.
8	Licence varied by notice 1122845, issued on 04-Jan-2011, which came into effect on 04-Jan-2011.
9	Licence varied by change to Scheduled Activity name, issued on 09-Feb-2011, which came into effect on 09-Feb-2011.
10	Licence varied by notice 1125212, issued on 07-Mar-2011, which came into effect on 07-Mar-2011.
11	Licence varied by notice 1502594 issued on 09-Nov-2011
12	Licence transferred through application 1502762 approved on 16-Nov-2011 , which came into effect on 21-Nov-2011
13	Licence varied by notice 1503513 issued on 09-Jan-2012
14	Licence varied by notice 1504600 issued on 06-Mar-2012
15	Licence varied by notice 1518336 issued on 27-May-2014
16	Licence varied by notice 1526565 issued on 24-Nov-2014

www.ghd.com

GHD

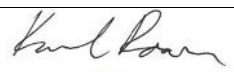
133 Castlereagh St Sydney NSW 2000

-

T: +61 2 9239 7100 F: +61 2 9239 7199 E: sydmail@ghd.com.au

\\ghdnet\ghd\AU\Wagga Wagga\Projects\23\15864\Tech\Environment\PEA for relocation of TAFS_Rev3.docx

Document Status

Rev No.	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
1	Aryel Pyliotis	Karl Rosen		Chrisjan Joubert		29 July 2016
2	Aryel Pyliotis	Karl Rosen		Chrisjan Joubert		12 September 2016
3	Aryel Pyliotis	Karl Rosen		Chrisjan Joubert		20 September 2016