Report

Limited Phase 2 Environmental Investigation

184-192 Restwell Road, Prairiewood NSW

22 OCTOBER 2015

Prepared for

GJW Consultancy Pty Ltd

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Proj # SES_424

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Date: **22 October 2015**
Reference: SES_424
Status: Final

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Table of Contents

Tables

Appendices

Executive Summary

Sullivan Environmental Sciences Pty Ltd (Sullivan-ES) was engaged by GJW Consultancy Pty Ltd (GJW) to undertake a Limited Phase 2 Environmental Investigation (Limited Phase 2) at the property located at 184-192 Restwell Road, Prairiewood NSW; henceforth referred to as 'the site'.

The site is currently owned by the Calabria Community Club Ltd and used as a sports field and club house amenities. The site is earmarked for redevelopment to construct a multi-storey apartment building with basement car parking.

The objective of the Limited Phase 2 was to conduct an appraisal of the current and historical site activities, assess the potential for contamination from those activities, and verify, through limited soil sampling, if historical or current activities have adversely impacted the site soil conditions. The scope of work for the Limited Phase 2 consisted of conducting a search and review of aerial photographs, section 149 certificates, land title information, WorkCover dangerous goods licensing, registered groundwater bores, NSW EPA contaminated sites register, soil and geological maps, the Fairfield Local Environmental Plans (LEPs), and acid sulfate soils maps. A detailed site inspection was undertaken to visually record site conditions and its surrounds, followed by a program of soil sampling that consisted of:

- 11 x test pits and soil sampling along stockpiled soil mounds located along the eastern and southern site boundaries.
- 10 x hand augered soil bores located in positions of historical activities and operations.
- Chemical analysis of 20 soil samples from various locations across the entire site for a suite of chemicals commensurate with potential contamination from current and historical activities.

Based on the findings of this Limited Phase 2, Sullivan-ES make the following conclusions:

- The site has had limited exposure to historical activities that may have caused contamination, which correlates well with soil analytical results showing that the site soils are of relatively good quality and meet the land use criteria for the proposed development. As such, the site soils are suitable for the proposed land use as a multi-storey residential apartment.
- Asbestos was detected at one location (TP6B_0.4m) in the stockpiled soil mounds. This impact is considered a localised impact given that asbestos was not detected anywhere else nor was asbestos containing materials visually observed anywhere.
- Apart from the localised detection of asbestos, the quality of soil within the mounds meets the land use criteria and would be suitable for use onsite, however, the soil is mixed with anthropogenic wastes and extraneous materials which are unsuitable to remain onsite. These waste materials should be screened and segregated from the soil mounds for offsite recycling or disposal.
- Works required to characterise or ameliorate the soil mounds, such as segregating anthropogenic waste or removing asbestos, should be the subject of a waste management plan (WMP) to be incorporated within construction management plans for the new development. The WMP should include details of sampling for waste classification purposes and management options to reuse, reduce or dispose of the waste materials including asbestos wastes. Sampling for waste classification purposes should considered the presence of waste materials existing beyond the southern site boundary and be undertaken following the NSW DECCW Waste Guidelines 2009 and the ASC NEPM 2013 guidelines.

This Executive Summary is subject to the Limitations of the report as stated in Section 8.

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1 Introduction

Sullivan Environmental Sciences Pty Ltd (Sullivan-ES) was engaged by GJW Consultancy Pty Ltd (GJW) to undertake a Limited Phase 2 Environmental Investigation (Limited Phase 2) at the property located at 184-192 Restwell Road, Prairiewood NSW; henceforth referred to as 'the site'. The location of the site is shown on Figure 1 **(Appendix A)**. The general layout of the site is shown on Figure 2 **(Appendix A)**.

The site is currently owned by the Calabria Community Club Ltd and used as a sports field and club house amenities. The site is earmarked for redevelopment to construct a multi-storey apartment building with basement car parking.

1.1 Objectives

The objectives of the Limited Phase 2 was to:

- conduct an appraisal of the current and historical site activities;
- assess the potential for land contamination from those activities; and
- verify, through limited soil sampling, if historical or current activities have adversely impacted the site soil conditions.

1.2 Scope of Work

The following presents the scope of work conducted for the Limited Phase 2.

- Reviewing available records and information relevant to the site including:
    - Historical aerial photographs
    - WorkCover Dangerous Goods Licensing
    - Section 149 certificates and available Council building and development works
    - Land titles
    - Registered groundwater bores
    - NSW EPA contaminated land registry
    - Environment protection licensing
- Conducting a detailed site inspection to document current site conditions and surrounding environments.
- Conducting field sampling of soils by:
    - Reviewing all Dial-Before-You-Dig service plans
    - Excavating and sampling of soils from a total of 11 test pits along the length of a soil mound
    - Hand augering and sampling of soils from a total of 10 bore holes targeted at areas of concern.
- Conducting laboratory analysis of collected soil samples.
- Preparing a Limited Phase 2 Environmental Investigation report in consideration of the NSW EPA Guidelines for Consultants Reporting on Contaminated Sites, 1997 (the Reporting Guidelines), the State Environmental Planning Policy 55 (the SEPP55), and the National Environment Protection (Assessment of Site Contamination) Measure 2013 (the ASC NEPM 2013).

1.3 Regulatory Framework

The Limited Phase 2 was prepared in accordance with the following regulatory framework and guideline documents:

1 Introduction

- Contaminated Land Management Act 1997 (CLM Act).
- State Environmental Planning Policy No.55 – Remediation of Land 1998 (SEPP55).
- NSW EPA Guidelines for Consultants Reporting on Contaminated Sites, 1997 (OEH, 2011).
- National Environment Protection (Assessment of Site Contamination) Measure 2013 (ASC NEPM 2013).

2

Site Information

The following sections were compiled from:

- Information provided by CJW.
- The detailed site inspection undertaken by Sullivan-ES on 18 September 2015.
- Published Australian geology and topographic maps.
- NSW Department of Primary Industries - Water (DPI Water) groundwater database.
- Fairfield Local Environmental Plan (LEP) 2013.

2.1 Identification and Land Zone

The site is a trapezium shape and is approximately 1.4 hectares (14,000m^2) in area and legally identified as Lot 1 in DP1175636. This new legal boundary has recently been registered (on 31 August 2015) as the result of the subdivision of the previous parcel known as Lot 7 section E in DP6934.

In accordance with the Fairfield LEP 2013 (Land Zoning Map - Sheet LZN_011), the land use zone of the site is B4 Mixed Use.

2.2 Site Features

A general site layout is presented on Figure 2 in **Appendix A.** Site photographs taken during the site inspection are presented in **Appendix D**.

Site Description

The site is predominately grassed with concrete slabs covering the entry driveway and central car parking area. The main features of the site comprise a main building used as a sports clubhouse, and a single level residential building. Both buildings are constructed of brick with either tiled or metal sheet roofing. A small metal garden shed is located south of the residential building, while another small metal shed is located at the sites south western corner and used as a chicken coop. A shipping container is located south of the clubhouse. The remainder of the site consists of a sports oval and open space areas. The site boundary bisects the sports oval and therefore only the eastern part of the oval is included within the subject of this Limited Phase 2. At the time of the site inspection the site was being used as a car parking lot.

An elongated mound of soil is present along the eastern and southern boundary. It is approximately 150m in length and varies in height and width along its extent. This mound mainly comprises soil material however the soil is mixed with general extraneous materials and anthropogenic wastes. Some examples of the observed wastes includes: concrete boulders, broken bricks, scrap metal, plastic bags, glass and plastic bottles, metal frames, metal/plastic chairs, wire, fabric and cloth offcuts, tyres, a shopping trolley, old clothes line frame, plastic mesh, timber, rubber hoses, foam, cardboard, chunks of bitumen,

The southern boundary is an embankment that drops away steeply to the adjoining riparian zone land (water course area). The definition of the southern boundary is not known as there is no fence line to define this boundary. The soil mounds appear to encroach this boundary and may go further down the embankment.

Surrounding Land

The site is bordered by the following land uses:

- **North** – Restwell Road then a shopping complex.

- **South** – Open space used as a riparian zone (water course).
- **East** – Community youth building and the riparian zone.
- **West** – Sports oval then onto the T-Way public bus route roads.

2.3 Environmental Setting

Topography and Drainage

The site is relatively flat and sits at approximately 33m above sea level (AHD – Australian Height Datum). Surface water presumably infiltrates the unsealed surfaces or drains from the roof guttering and the ground surface directly into stormwater inlet pits.

Geology

The site is located on the geological formation of Triassic period Bringelly Shale lithology of the Wianamatta Group. The shales consist of shale, carbonaceous claystone, claystone, laminite, fine to medium grained lithic sandstone, rare coal and tuff. The sites paleo-environment is documented as alluvial and estuarine. (Ref: Penrith 1:100,000 Geological Series Sheet 9030 (edition 1) 1991, NSW Department of Minerals and Energy).

Soil Type

The soil landscape map shows that the underlying soils at the site are of the Blacktown soil landscape group (NSW OEH website – eSPADE). This type of soil group has the following traits:

- Landscape - gently undulating rises on Wianamatta Group shales. Local relief to 30 m, slopes usually >5%. Broad rounded crests and ridges with gently inclined slopes. Cleared Eucalypt woodland and tall open-forest (dry schlerophyll forest).
- Soils - shallow to moderately deep (>100 cm) hard setting mottled texture contrast soils, red and brown podzolic soils on crests grading to yellow podzolic soils on lower slopes and in drainage lines.
- Limitations - localised seasonal waterlogging, localised water erosion hazard, moderately reactive highly plastic subsoil, localised surface movement potential.

Groundwater

A review of the DPI Water groundwater database showed that the closest registered groundwater bore is approximately 1km to the east within the grounds of the Fairfield City Golf Course. The licence for this bore has been cancelled. Details of the registered bore are provided below.

Table 2-1 Registered Groundwater Bores Information

Bore ID	Date	Distance/Direction to site	Depth and SWL[1]	Purpose
GW031660	1965	Approx. 1km/east	152m / 1.8m	Irrigation

(1) Standing Water Level

2 Site Information

Groundwater is expected to be relatively deep although should be within 20m of the ground surface. The inferred direction of groundwater flow is expected to be toward the south east in the direction of the Georges River system.

Acid Sulfate Soils

In accordance with the Fairfield LEP 2013 - Combined Local Map 1 - Acid Sulfate Soils/Unstable Lands, there is no planning information that applies to the site for acid sulfate soils therefore these soil types are very unlikely to exist at the site.

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3

Site History

The following was sourced from information provided in:

- Historical aerial photographs
- Google Earth historical imagery
- Section 149 planning certificates (Section 149)
- Land title deeds
- WorkCover Dangerous Goods Licences
- NSW EPA Contaminated Lands Register and Notifications.

3.1 Aerial Photography

The table below presents the details of observations made from each aerial photograph reviewed. Historical aerial imagery is presented in **Appendix E**.

Table 3-1 Historical Aerial Imagery

Year	Details
1930 (black & white)	The site is visible as a rectangular parcel and is being used for crop farming purposes. Crop fields are visible across all areas of the site. A small building (farmhouse?) is present in the central north area. A creek (or similar water course) is visible entering the site halfway along its western boundary and exiting its eastern boundary at the junction of the southern diagonal boundary line. All surrounding lands are being used for farming. Extensive areas of native bush are visible in this photo.
1951 (black & white)	The northern half of the site is being used for farming purposes with large areas visible as cultivated land in the northwest and northeast corners. The small farmhouse building exists with additional structures and a large farm shed has been constructed in the north east area. The creek line is prominent in this photo and bisects the site along the same alignment as the previous photo. A dam is visible offsite on the upstream side (west) of the creek. The southern area of the site (south of the creek) is being used as pasture land. Surrounding areas remain predominantly used for farming purposes. Thinning of the native bush in the wider region is apparent in this photo.
1961 (black & white)	The site appears relatively unchanged and used for farming purposes. A large shed building has been erected in the central portion of the southern half of the site surrounded by pasture land. The creek exists as a scoured depression following the same alignment as previous years. The offsite dam also exists to the west. Surrounding areas appear relatively unchanged to the previous decade.
1970 (black & white)	The site structures are largely unchanged however there appears to be no cultivated areas on site. The residential house that remains today has been

3 Site History

Year	Details
	erected at the northern boundary. A row of cars is visible parked on the northern side of the creek. The offsite dam to the west appears to be in the process of being infilled, while earthworks are visible on land to the east. Major clearing of bushland has occurred and the golf course is now visible to the east of site.
1982 (colour)	Major changes have occurred onsite and within the immediate surrounds. All farm buildings have been removed. The residential house remains along with a small shed near where the former farmhouse was positioned. The creek has been infilled and realigned as a water course as it exists today. Much of the surrounding areas are becoming urbanised and have been cleared of bush with only small pockets remaining. Residential homes have been constructed to the west of the site. Earthworks are occurring to the north of the site.
1994 (colour)	The site exists as it does today with the sports clubhouse built in the central area, the residential house at the northern boundary and the sports oval (half of which encroaches the western boundary). The central area has not been extensively covered by concrete as it is today. There exists 20 odd small stockpiles of soil onsite east of the clubhouse. Much of the broader area surrounding the site has been urbanised. The community youth facility has been built east of the site. The riparian zone is prominent along the southern boundary. The shopping centre has been built north of the site.
Dec 2004 – Google Earth image (colour)	The site is being used for car parking. Cars are parked along a central dirt access road that enters the site from Restwell Road and runs down to the northern side of the clubhouse. A small shed is present near the north end of the clubhouse also. There appears to be a fence line erected to separate the residential house area and the eastern boundary from the sports oval and clubhouse. No other visible changes have occurred onsite.
Aug 2005 - Google Earth image (colour)	The site is no longer being used to park cars. The fence line that separates the residential house is prominent in this photo. No other changes are visible.
Mar 2007 - Google Earth image (colour)	Scouring or stockpiling of soil is visible along the southern boundary. Stockpiled mounds are present along the eastern boundary overgrown with vegetation. Much of the surrounding areas remain unchanged.
Nov 2012 Google Earth image (colour)	Sealing with concrete of the central areas of the site has occurred. Earthworks, stockpiling or scouring of the ground is visible at the eastern boundary. Visible materials of unknown type are present along the southern boundary and the mounds are visible along the eastern boundary.

Year	Details
Oct 2013 - Google Earth image (colour)	Earthworks or stockpiling of soils is visible in the southwest corner of the site. No other changes have occurred.
Jan 2014 – to present day - Google Earth images (colour)	Soil stockpiles and anthropogenic type materials are visibly present along the southern boundary. The soil mounds along the eastern and southern boundaries are overgrown with vegetation. No other changes have occurred.

3.2 Section 149 Certificate

Under item 19 Site Verification Certificates (p15) of the section 149 Certificate (presented in **Appendix F**), it is stated that the site is not affected by any of the matters as prescribed by Clause 59(2) of the Contaminated Land Management Act 1997.

3.3 Land Titles

The table below presents the details of the relevant land titles for the site. Land title documents are presented in **Appendix G**.

Table 3-2 Summary of Land Title Information

Title Ref.	Title ID	Year	Details	Contamination Issues
Lot 7 of Section E in DP6934	Vol. 2921 Fol. 250	1919-1919	Owner: Edward Fletcher (Fruit Grower)	Farming
		1919-1929	Charles Fredrick and Edith Margaret Reid (Freeholder)	Farming
		1929-1937	Edward Henry James Compton (Upholsterer)	Farming related (?)
		1937-1983	Anthony Gauchi (Carrier)	Farming related (?)
Lot 1 in DP 1175636	1/1175636	1983-present	Calabria Community Club Ltd	Sporting and community activities

3.4 WorkCover DG Search

A Dangerous Goods Licence search was requested to be conducted by WorkCover on their Stored Chemical Information Database (SCID) and microfiche records. The search found that there are no records pertaining to the licensing of dangerous goods at the site. The WorkCover search documents are presented in **Appendix H**.

3.5 Contaminated Land Register and Notifications

A review of the NSW EPA list of sites notified under section 58 of the CLM Act 1997 as well as the list of sites notified to the EPA under the duty to report requirements (section 60) showed that the site is not registered as a contaminated site or notified as a potentially contaminated site.

3.6 Contamination Issues

The following operations and activities have been identified as contamination issues from the historical appraisal:

- Farming operations.
- Infilling of creek areas and other earthworks.
- Stockpiling of soils of unknown origin.
- Storing/dumping of anthropogenic wastes.

The site areas where these activities have occurred where targeted for sampling to assess the potential contamination in soils. These works are presented in the following sections of this report.

Based on the historical issues, the following contaminants of concern were assessed in soils:

- Total Petroleum/Recoverable Hydrocarbons (TPH/TRH)
- Polycyclic Aromatic Hydrocarbons (PAH)
- BTEXN (benzene, toluene, ethylybenzene, xylenes, naphthalene)
- Metals (As, Cd, Cr, Cu, Hg, Ni, Pb, Zn)
- Pesticides (organochlorine and organophosphate)
- Asbestos.

4

Soil Investigation Methodology

Soil and sampling locations are presented on Figure 2 (**Appendix A**).

4.1 Soil Sampling

Details of the soil sampling program are presented below.

Table 4-1 Soil Sampling Works Summary

Activity/Item	Details
Date of Field Activities	28 and 29 September 2015
Service Location	Dial Before You Dig plans were reviewed before any sampling was conducted to locate underground services.
Test pits and boreholes	Ken Coles Excavations Pty Ltd was contracted to excavate 11 test pits within the soil mounds. A hand auger was used to auger 10 soil bore holes. The rationale behind the position of each sampling location was: • Test pits (TP1, TP2, TP3, TP4, TP5A, TP5B, TP6A, TP6B, TP7A, TP7B, TP8) were positioned evenly along the soil mound/stockpiles along the southern and eastern site boundaries to assess for potential dumping of wastes. • Soil bores (SB4, SB5, SB6, SB7) were used to target the former creek that has been previously infilled. • Soil bores (SB2, SB3, SB8, SB9) were used to target former farming structures and operational areas. • The remaining soil bores were used to generally cover the site area and assess the soil quality of former crop growing land.
Soil Logging	Soil type classifications and descriptions are based on Unified Soil Classification System (USCS) and on Australian Standard AS4482.1-1997 *"Guide to sampling and investigation of potentially contaminated soil"*. Soil descriptions for the lithology encountered during drilling are presented in the test pit and bore logs in **Appendix C**.
Soil Sampling	Soil samples were taken directly from the excavator bucket or from the hand auger using nitrile gloves that were changed between samples. All soil samples were placed in clean, laboratory-supplied acid washed solvent rinsed glass jars. Asbestos samples were placed inside laboratory supplied zip-lock bags.
Soil Screening	Soil samples were screened for the potential presence of hydrocarbons/volatile organic carbons (VOCs) using a photo-ionisation detector (PID), which was calibrated to a known concentration (100 parts per million (ppm)) of iso-butylene calibration gas. PID readings are presented on the logs in **Appendix C** and the calibration records are presented in **Appendix I**.

Activity/Item	Details
Decontamination Procedures	The hand auger was washed and decontaminated between sampling locations with potable water and a solution of Decon 90.
Sample Preservation	Samples were stored on ice in an insulated cool box whilst on-site and during transit to the laboratory. All samples analysed for the contaminants of concern were submitted and analysed within the required holding period.
Disposal of Soil Cuttings	Soil cuttings were used to backfill test pits and bore holes once samples had been collected.
Disposal of consumable materials	Single use materials used during sampling were placed into garbage bags and disposed off-site.

4.1.1 Soil Sample Analysis

A total of 20 soil samples were analysed by ALS Environmental from 11 test pits collected from within the soil mounds and from the 10 hand augered bores holes. Analysis of the soil samples included:

- 18 primary soil samples were analysed for TPH/TRH, BTEXN, PAH and 8 heavy metals.
- 12 soil samples were analysed for the presence of asbestos.
- 6 primary soil samples were analysed for Pesticides (OC/OP).
- 2 field quality control (QC) duplicate sample were analysed.

4.2 Soil Investigation Criteria

NEPM 2013 Health Based Investigation Levels

The National Environment Protection (Assessment of Site Contamination) Measure 2013 (ASC NEPM 2013) Health-based Investigation Levels (HILs) provide a framework that is applicable for assessing human health risk via all relevant pathways of exposure and covers a broad range of metals and organic substances. Different levels are provided for a variety of exposure settings based on the land use scenario at a particular site.

The proposed land use for the site will be multi-storey residential, as such the land use criteria adopted for HILs for this Limited Phase 2 was:

- **HIL B**: Residential with minimal opportunities for soil access including dwellings with fully and permanently paved yard space such as high-rise buildings and apartments.

NEPM 2013 Health Screening Levels

The ASC NEPM 2013 HILs do not provide criteria for petroleum hydrocarbon chemicals, therefore the Health Screening Levels (HSLs) were developed and form part of the ASC NEPM 2013. The HSLs are designed to be protective of human health and are applicable to assessing human health risk via the inhalation pathway. The HSLs used in this report have not been adjusted for site specific parameters such as moisture content for this phase of work. HSLs are available for various depth profiles and predominant lithology (sand, silt and clay).

4 Soil Investigation Methodology

The proposed land use for the site will be multi-storey residential, as such the land use criteria adopted for HILs for this Limited Phase 2 was:

- **HSL B**: Residential with minimal opportunities for soil access including dwellings with fully and permanently paved yard space such as high-rise buildings and apartments.

NEPM 2013 Ecological Investigation/Screening Levels

The ASC NEPM 2013 Ecological Investigation levels and Ecological Screening Levels (EILs and ESLs) have been developed for selected metals and organic substances and are applicable for assessing risk to terrestrial ecosystems. EILs depend on specific soil physicochemical properties, whereas ESLs do not, and both are relevant to land use scenarios and apply to the top two (2) metres of soil. EILs take into account soil texture and age of the impacts, whereas ESLs account only for soil texture.

The ASC NEPM 2013 EIL Calculation Spreadsheet was used to calculate site specific EILs for copper, chromium, nickel and zinc. Nominal values were used to calculate ACLs and ABLs for each analyte.

NEPM 2013 Asbestos

The ASC NEPM 2013 asbestos guidelines have been developed for managing land use impacts associated with asbestos and are applicable for assessing risk to human health. The guideline has been derived from the Western Australian Department of Health (WA DoH 2009) guidance. The guidance covers bonded Asbestos Containing Material (bonded ACM), Fibrous Asbestos (FA) and Asbestos Fines (AF).

Note that these criteria were not used in this Limited Phase 2 given that the analysis was to assess for the presence of asbestos only and not to quantify asbestos materials in soils.

NEPM 2013 Aesthetic Considerations

In accordance with the ASC NEPM 2013, the aesthetic state of sites is required to be taken into account. Aesthetic issues generally relate to the presence of materials with a negligible risk or non-hazardous inert foreign material in soil or fill resulting from human activity. Sites that have been assessed as being acceptable from a human health and environmental perspective may still contain such foreign material. An assessment of the site aesthetics requires consideration of the natural state of soil on any given site, and a comparison between it and the soil encountered during investigation works.

In particular, soils on site should not exhibit discolouration (staining), a malodorous nature (odours) or abnormal consistency (rubble and trash).

NEPM 2013 Management Limits

The ASC NEPM 2013 Management Limits are relevant for TRH contaminants only. The Management Limits are specific for soil types (coarse and fine) and land uses. If adopted on a site, Management Limits are intended to avoid or minimise the potential effects of the following and require consideration of site-specific factors to determine the maximum depth to which the limits should apply:

- Formation of observable light non-aqueous phase liquids (LNAPL).
- Fire and explosive hazards.
- Effects on buried infrastructure e.g. penetration of, or damage to, in-ground services by hydrocarbons.

4.3 Quality Assurance and Quality Control

The Limited Phase 2 works were completed following standard operating procedures for conducting site contamination investigations. Standards followed included:

- General field documentation
- Health and safety
- Use of Personal Protective Equipment (PPE)
- Representative sample collection and labelling
- Equipment calibration
- Chain of Custody documentation for analytical samples
- Decontamination
- Collection of quality control samples (may include: intra laboratory, inter laboratory, rinsates, blanks, spikes).

The data validation guidelines adopted are based upon the following data validation guidance documents published by the United States Environmental Protection Agency (USEPA):

- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (EPA 540-R-10-011, dated January 2010)
- USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (EPA 540/R-99/008, dated June 2008)
- National Environment Protection (Assessment of Site Contamination) Measure (ASC NEPM 2013).

The process involves the checking of analytical procedure compliance and the assessment of the accuracy and precision of analytical data from a range of quality control measurements generated from both field sampling and analytical programs. Specific elements that have been checked and assessed for this project include:

- preservation and storage of samples upon collection and during transport to the laboratory
- holding times
- use of appropriate analytical procedures
- required LOR
- frequency of conducting quality control measurements
- laboratory blanks
- field duplicates
- laboratory duplicates
- matrix spike/matrix spike duplicates (MS/MSDs)
- surrogates (or System Monitoring Compounds)
- the occurrence of apparently unusual or anomalous results, e.g. laboratory results that appear to be inconsistent with field observations or measurements.

5

Results and Discussion

5.1 Field Observations

Field observations made during the drilling of the soil bores indicated the following:

- No odours or discolouration was noted in soil samples.
- The PID readings showed no elevated volatiles in the samples collected.
- Anthropogenic wastes (human trash and junk) and extraneous materials (concrete rubble and building materials) were observed at all test pit locations.

5.2 Soil Analytical Results and Discussion

Soil analytical data results are presented in Table 1 of **Appendix B** and in the laboratory reports contained in **Appendix J**.

The QA/QC results reported in Table 1 along with the data validation process summarised in section 5.3 show that the results represent the conditions at the site and are considered acceptable for interpretive use.

The results presented in Table 1 show that all sample results meet the adopted soil investigation criteria and the soils across the site are of generally good quality. Indications of contamination impacts were reported as follows:

Asbestos

Chrysotile asbestos was detected in the soil mound at location TP6B_0.4m as one friable asbestos fibre bundle approximately 2mm x 1mm x 0.5mm.

Asbestos material was not observed within the test pit during sampling nor were any fibro type materials, and therefore the source of the detectable asbestos is not known, however it is likely to be related to the dumping of anthropogenic wastes and extraneous materials. At TP6B (refer to log), pieces of timber, plastic scraps and mesh fencing were observed buried in the mound. Asbestos was not detected at any other sample location and asbestos containing materials (e.g. fibro cement sheeting, fibrous lagging or fibro tiles) were not observed at any location. We considered that the presence of asbestos may only be a localised occurrence and the extent of asbestos impact is potentially limited.

Aesthetic Impacts

Anthropogenic waste and extraneous materials are present within the stockpiled soil mounds along the eastern and southern boundaries. The extent of the waste in the mounds is not known and may be present in the soils that encroach the southern boundary and go down the embankment to the riparian zone. Based on visual assessment of this material, it would not be suitable to be used at the site.

5.3 Quality of Analytical Data

Analytical data validation is the process of assessing whether the data is in compliance with method requirements and project specifications. The primary objective of this process is to ensure that data of known quality are reported, and to identify if data can be used to fulfil the overall project objectives.

On the basis of the analytical data validation procedure employed, the overall quality of the soil analytical data produced is considered to be of an acceptable standard for interpretive use. The table below provides a summary of the data validation.

5 Results and Discussion

Table 5-1 Validation of Data Quality

Requirement	Compliance	Comments
Field Duplicates	Yes	Intra-laboratory duplicate samples were collected by splitting each sample into the primary and duplicate sample containers. 1 duplicate per 10 primary samples was analysed.
RPDs	Yes	All calculated RPDs fall within the acceptable range of <50%, the exception being samples with concentrations of <10 times the LOR which can show a higher RPD. A minor noncompliance was reported for Ni (SB3_0.2/QC2). The RPD was marginally over the 50% threshold and can be attributed to the heterogeneous nature of soils. Where concentrations of either sample is <LOR or <10 times the LOR, then no RPD is calculated.
Sampling equipment properly decontaminated	Yes	Disposable equipment used. Hand auger decontaminated between sampling locations.
Sample Preservation	Yes	Samples were properly preserved. Samples were compliant with required storage temperature.
Samples delivered to laboratory within sample holding times.	Yes	Confirmed from COCs and laboratory reports.
Equipment Calibration	Yes	Refer to **Appendix I**.
Blanks	Partial	Trip blank samples were not analysed for soils. No volatile chemicals were expected or were present within the soil materials, therefore the potential for cross contamination during sample transport was considered negligible.
Analytical procedures	Yes	All NATA accredited
SOP and competent field personnel	Yes	Sampling procedures follow industry standards, and field staff (Adam Sullivan – 18 years experience) are competent in sampling methods and QA/QC protocols.

6

Conclusions and Recommendations

Conclusions

Based on the findings of this Limited Phase 2, Sullivan-ES make the following conclusions:

- The site has had limited exposure to historical activities that may have caused contamination, which correlates well with soil analytical results showing that the site soils are of relatively good quality and meet the land use criteria for the proposed development. As such, the site soils are suitable for the proposed land use as a multi-storey residential apartment.
- Asbestos was detected at one location (TP6B_0.4m) in the stockpiled soil mounds. This impact is considered a localised impact given that asbestos was not detected anywhere else nor was asbestos containing materials visually observed anywhere.
- Apart from the localised detection of asbestos, the quality of soil within the mounds meets the land use criteria and would be suitable for use onsite, however, the soil is mixed with anthropogenic wastes and extraneous materials which are unsuitable to remain onsite. These waste materials should be screened and segregated from the soil mounds for offsite recycling or disposal.

Recommendations

Works required to characterise or ameliorate the soil mounds, such as segregating anthropogenic waste or removing asbestos, should be the subject of a waste management plan (WMP) to be incorporated within construction management plans for the new development. The WMP should include details of sampling for waste classification purposes and management options to reuse, reduce or dispose of the waste materials including asbestos wastes. Sampling for waste classification purposes should considered the presence of waste materials existing beyond the southern site boundary and be undertaken following the NSW DECCW Waste Guidelines 2009 and the ASC NEPM 2013 guidelines.

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7

References

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USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (EPA 540/R-99/008, dated June 2008)

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8

Limitations

Sullivan Environmental Sciences Pty Ltd (Sullivan-ES) has prepared this report in accordance with the usual care and thoroughness of the consulting profession for the use of GJW Consultancy Pty Ltd and only those third parties who have been authorised in writing by Sullivan-ES to rely on this Report.

It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this Report.

It is prepared in accordance with the Sullivan-ES fee proposal (7 September 2015) and email acceptance by GJW Consultancy Pty Ltd (14 September 2015).

Where this Report indicates that information has been provided to Sullivan-ES by third parties, Sullivan-ES has made no independent verification of this information except as expressly stated in the Report. Sullivan-ES assumes no liability for any inaccuracies in or omissions to that information.

This Report was prepared between 14 September 2015 and 9 October 2015 and is based on the conditions encountered and information reviewed at the time of preparation. Sullivan-ES disclaims responsibility for any changes that may have occurred after this time.

Investigations undertaken in respect of this Report are constrained by the particular site conditions, such as the location of buildings, services and vegetation. As a result, not all relevant site features and contamination may have been identified in this Report.

Subsurface conditions can vary across a particular site and cannot be exhaustively defined by the investigations described in this Report.

This Report should be read in full. No responsibility is accepted for use of any part of this report in any other context or for any other purpose or by third parties. This Report does not purport to give legal advice.

Except as required by law, no third party may use or rely on this Report unless otherwise agreed by Sullivan-ES.

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It is the responsibility of third parties to independently make inquiries or seek advice in relation to their particular requirements and proposed use of the site.

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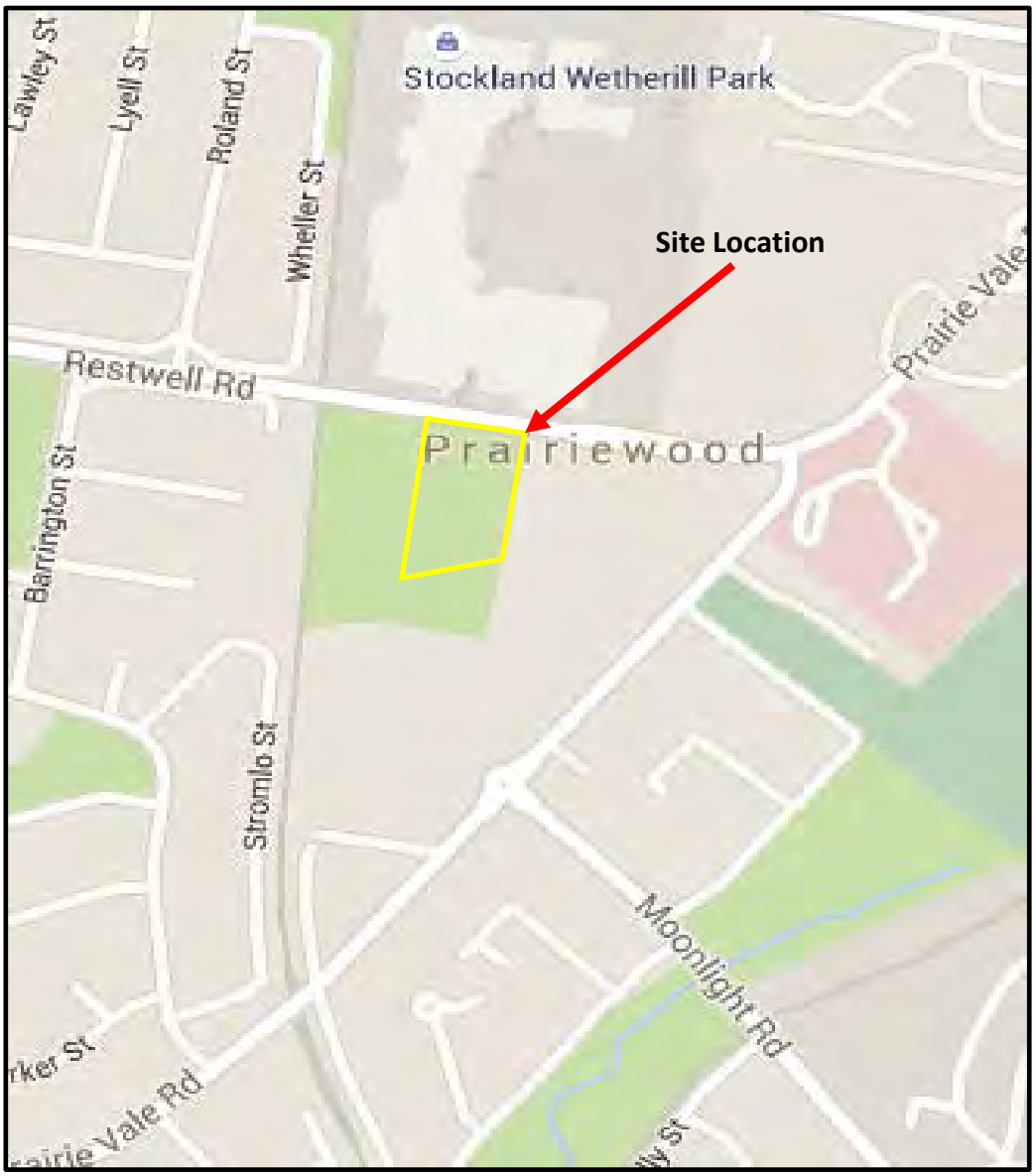
A

Appendix A Figures



Imagery: Google Maps 2015

N

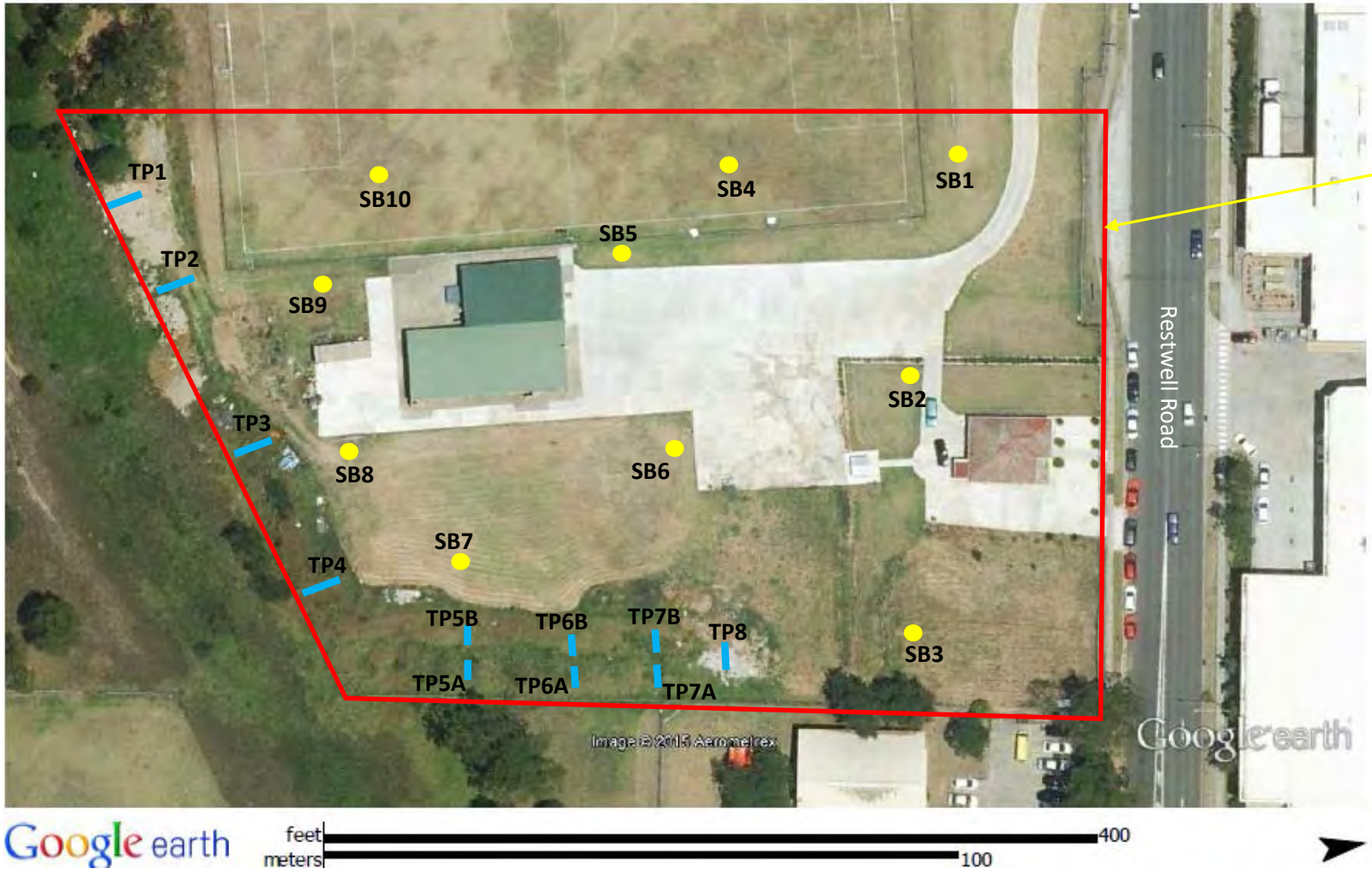
Not to scale

SULLIVAN environmental sciences	**Client:** GJW Consultancy Pty Ltd	**Figure 1:** Site Location
	Project: Limited Phase 2 Environmental Investigation	
Project # SES_424	**Location:** 184-192 Restwell Road, Prairiewood NSW	**Date:** 9/10/2015

Test pit

Soil bore

All locations are approx.



SULLIVAN environmental sciences	**Client:** GJW Consultancy Pty Ltd	**Figure 2:** Site Layout
	Project: Limited Phase 2 Environmental Investigation	
Project #: SES_424	**Location:** 184-192 Restwell Road, Prairiewood NSW	**Date:** 9/10/15

B

Appendix B Results Tables

Table 1: Soil Analytical Results

184-192 Restwell Road, Prairiewood NSW
GJW Consultancy Pty Ltd
Proj # SES_424

			Metals								Asbestos			TPH					TRH							BTEXN							
Analyte	Moisture	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	Mercury	Sample Weight	Asbestos Detected	Asbestos Type	C6 - C9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	C10 - C36 Fraction (sum)	C6 - C10 Fraction	C6 - C10 Fraction minus BTEX (F1)	>C10 - C16 Fraction	>C16 - C34 Fraction	>C34 - C40 Fraction	>C10 - C40 Fraction (sum)	>C10 - C16 Fraction minus Naphthalene (F2)	Benzene	Toluene	Ethylbenzene	meta- & para-Xylene	ortho-Xylene	Sum of BTEX	Total Xylenes	Naphthalene
Units	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	g	g/kg	--	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR	1	5	1	2	5	5	2	5	0.1	0.01	0.1	--	10	50	100	100	50	10	10	50	100	100	50	50	0.2	0.5	0.5	0.5	0.5	0.2	0.5	1
HIL Criteria	--	500	150	500	30,000	1,200	1,200	60,000	120	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HSL Criteria	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	45	--	--	--	--	110	0.5	160	55	--	--	--	40	3
EIL Criteria	--	100	--	410	230	1,100	270	770	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	170
ESL Criteria	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	180	--	300	2,800	--	120	50	85	70	--	--	--	105	--
Mgmt Limits	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	700	--	2,500	10,000	--	1,000	--	--	--	--	--	--	--	--
Sample ID	Depth (m)	Date																														
TP1_0.5	0.5	28/09/2015	10.8	9	<1	17	49	69	13	110	<0.1	57.7	No	--	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
QC1	--	28/09/2015	12.3	8	<1	14	46	82	13	124	<0.1	--	--	--	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
RPD	--	--	13.0	11.8	--	19.4	6.3	17.2	0.0	12.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TP2_1.4	1.4	28/09/2015	16.8	9	<1	24	23	25	10	48	<0.1	27.4	No	--	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
TP3_0.4	0.4	28/09/2015	11.0	11	<1	20	19	19	8	43	<0.1	20.3	No	--	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
TP4_1.0	1.0	28/09/2015	13.0	22	<1	22	30	44	13	86	<0.1	--	--	--	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
TP5B_1.5	1.5	28/09/2015	24.5	12	<1	17	19	63	6	106	<0.1	50	No	--	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
TP6B_0.4	0.4	28/09/2015	16	19	<1	27	33	32	18	76	<0.1	57.4	Yes	Ch	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
TP7A_0.3	0.3	28/09/2015	15.1	10	<1	19	24	37	13	105	<0.1	--	--	--	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
TP8_0.4	0.4	28/09/2015	16.4	10	<1	26	22	36	14	62	<0.1	40.9	No	--	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
SB1_0.4	0.4	28/09/2015	14.0	17	<1	36	43	35	14	94	<0.1	42.9	No	--	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
SB2_0.8	0.8	28/09/2015	21.1	9	<1	24	12	16	6	18	<0.1	--	--	--	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
SB3_0.2	0.2	28/09/2015	10.6	13	<1	38	26	36	20	56	<0.1	--	--	--	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
QC2	--	28/09/2015	9.9	9	<1	47	31	29	40	63	<0.1	--	--	--	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
RPD	--	--	6.8	36.4	--	21.2	17.5	21.5	66.7	11.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB4_0.3	0.3	29/09/2015	14.3	12	<1	29	32	39	16	86	<0.1	--	--	--	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
SB5_0.5	0.5	29/09/2015	15.1	11	<1	18	34	24	14	67	<0.1	50	No	--	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
SB6_1.2	1.2	29/09/2015	18.7	9	<1	18	25	12	11	43	<0.1	28.1	No	--	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
SB7_1.0	1.0	29/09/2015	17.5	7	<1	20	26	31	12	42	<0.1	54.4	No	--	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
SB8_0.8	0.8	29/09/2015	12.8	11	<1	24	30	106	23	304	<0.1	57.3	No	--	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
SB9_0.3	0.3	29/09/2015	13.4	6	<1	14	24	26	11	67	<0.1	--	--	--	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
SB10_0.9	0.9	29/09/2015	16.2	18	<1	10	45	15	4	26	<0.1	50.1	No	--	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1

Legend
LOR - Limit of Reporting
mg/kg - milligrams per kilogram
Chromium - HIL criterion for Cr(VI) used
All EILs calculated for aged sources using NEPC EIL calculation spreadsheet with analytical data and assummed value of %clay at 30%, CEC at 20meq/100g, and pH at 7.
Where Non Limiting values occur for HSLs, then Csat value adopted.
HSL, ESL & Mgmt Limits use coarse materials

Table 1: Soil Analytical Results

184-192 Restwell Road, Prairiewood NSW
GJW Consultancy Pty Ltd
Proj # SES_424

Analyte	PAH																				
	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b+j)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1.2.3.cd)pyrene	Dibenz(a.h)anthracene	Benzo(g.h.i)perylene	Sum of polycyclic aromatic hydrocarbons	Benzo(a)pyrene TEQ (zero)	Benzo(a)pyrene TEQ (half LOR)	Benzo(a)pyrene TEQ (LOR)
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
HIL Criteria	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	400	4	--	--
HSL Criteria	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EIL Criteria	170	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ESL Criteria	--	--	--	--	--	--	--	--	--	--	--	--	0.7	--	--	--	--	--	--	--
Mgmt Limits	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sample ID	Depth (m)	Date																			
TP1_0.5	0.5	28/09/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
QC1	--	28/09/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
RPD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TP2_1.4	1.4	28/09/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
TP3_0.4	0.4	28/09/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
TP4_1.0	1.0	28/09/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
TP5B_1.5	1.5	28/09/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
TP6B_0.4	0.4	28/09/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
TP7A_0.3	0.3	28/09/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
TP8_0.4	0.4	28/09/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
SB1_0.4	0.4	28/09/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
SB2_0.8	0.8	28/09/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
SB3_0.2	0.2	28/09/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
QC2	--	28/09/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
RPD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB4_0.3	0.3	29/09/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
SB5_0.5	0.5	29/09/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
SB6_1.2	1.2	29/09/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
SB7_1.0	1.0	29/09/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
SB8_0.8	0.8	29/09/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
SB9_0.3	0.3	29/09/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
SB10_0.9	0.9	29/09/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2

Legend
LOR - Limit of Reporting
mg/kg - milligrams per kilogram
Chromium - HIL criterion for Cr(VI) used
All EILs calculated for aged sources using NEPC EIL calculation spreadsheet with analytical data and assummed value of %clay at 30%, CEC at 20meq/100g, and pH a
Where Non Limiting values occur for HSLs, then Csat value adopted.
HSL, ESL & Mgmt Limits use coarse materials

Table 1: Soil Analytical Results

184-192 Restwell Road, Prairiewood NSW
GJW Consultancy Pty Ltd
Proj # SES_424

Pesticides - OC

Analyte			alpha-BHC	Hexachlorobenzene (HCB)	beta-BHC	gamma-BHC	delta-BHC	Heptachlor	Aldrin	Heptachlor epoxide	Total Chlordane (sum)	trans-Chlordane	alpha-Endosulfan	cis-Chlordane	Dieldrin	4.4`-DDE	Endrin	beta-Endosulfan	Endosulfan (sum)	4.4`-DDD	Endrin aldehyde	Endosulfan sulfate	4.4`-DDT	Endrin ketone	Methoxychlor	Sum of Aldrin + Dieldrin	Sum of DDD + DDE + DDT
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.05	0.2	0.05	0.05
HIL Criteria			--	15	--	--	--	10	--	--	90	--	--	--	--	--	20	--	400	--	--	--	--	--	500	10	600
HSL Criteria			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EIL Criteria			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	180	--	--	--	--
ESL Criteria			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mgmt Limits			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sample ID	Depth (m)	Date																									
TP1_0.5	0.5	28/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
QC1	--	28/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RPD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TP2_1.4	1.4	28/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TP3_0.4	0.4	28/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TP4_1.0	1.0	28/09/2015	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.2	<0.05	<0.05
TP5B_1.5	1.5	28/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TP6B_0.4	0.4	28/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TP7A_0.3	0.3	28/09/2015	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.2	<0.05	<0.05
TP8_0.4	0.4	28/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB1_0.4	0.4	28/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB2_0.8	0.8	28/09/2015	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.2	<0.05	<0.05
SB3_0.2	0.2	28/09/2015	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.2	<0.05	<0.05
QC2	--	28/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RPD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB4_0.3	0.3	29/09/2015	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.2	<0.05	<0.05
SB5_0.5	0.5	29/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB6_1.2	1.2	29/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB7_1.0	1.0	29/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB8_0.8	0.8	29/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB9_0.3	0.3	29/09/2015	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.2	<0.05	<0.05
SB10_0.9	0.9	29/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Pesticides - OP

Analyte			Dichlorvos	Demeton-S-methyl	Monocrotophos	Dimethoate	Diazinon	Chlorpyrifos-methyl	Parathion-methyl	Malathion	Fenthion	Chlorpyrifos	Parathion	Pirimphos-ethyl	Chlorfenvinphos	Bromophos-ethyl	Fenamiphos	Prothiofos	Ethion	Carbophenothion	Azinphos Methyl
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR			0.05	0.05	0.2	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
HIL Criteria			--	--	--	--	--	--	--	--	--	340	--	--	--	--	--	--	--	--	--
HSL Criteria			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EIL Criteria			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ESL Criteria			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mgmt Limits			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sample ID	Depth (m)	Date																			
TP1_0.5	0.5	28/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
QC1	--	28/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RPD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TP2_1.4	1.4	28/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TP3_0.4	0.4	28/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TP4_1.0	1.0	28/09/2015	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
TP5B_1.5	1.5	28/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TP6B_0.4	0.4	28/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TP7A_0.3	0.3	28/09/2015	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
TP8_0.4	0.4	28/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB1_0.4	0.4	28/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB2_0.8	0.8	28/09/2015	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SB3_0.2	0.2	28/09/2015	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
QC2	--	28/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RPD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB4_0.3	0.3	29/09/2015	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SB5_0.5	0.5	29/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB6_1.2	1.2	29/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB7_1.0	1.0	29/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB8_0.8	0.8	29/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB9_0.3	0.3	29/09/2015	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
SB10_0.9	0.9	29/09/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Legend
LOR - Limit of Reporting
mg/kg - milligrams per kilogram
Chromium - HIL criterion for Cr(VI) used
All EILs calculated for aged sources using NEPC EIL calculation spreadsheet with analytical data and assummed value of %clay at 30%, CEC at 20meq/100g, and pH at 7.
Where Non Limiting values occur for HSLs, then Csat value adopted.
HSL, ESL & Mgmt Limits use coarse materials

C

Appendix C Logs

BOREHOLE LOG

Borehole No: SB1

Sheet 1 of 1

CLIENT:	GJW Consulting Pty Ltd	**JOB NUMBER:**	SES_424
PROJECT:	Limited Phase 2 Environmental Investigation	**DATE COMMENCED:**	28/09/2015
LOCATION:	184-192 Restwell Road, Prairiewood	**DATE COMPLETED:**	28/09/2015
DRILL CONTRACTOR:	N/A	**LOGGED BY:**	A.S.
Drill Model:	N/A	Hole Angle:	Bore Size: RL:
Drilling Fluid:	N/A	Orientation:	Co-ords:

Method/ Casing	Depth (m)	Graphic Log	USCS Classification	Material Description: type, colour/mottling, plasticity/particle size,secondary/minor components, soil origin	Moisture	Consistency	PID	Sampling	Field Records: insitu testing, groundwater observations/regime, well construction details, additional information
Hand Auger				Turf and topsoil					
				Fill: Clayey Silt, low plast, dark brown, soft, friable, minor shale rock fragments					
	0.50			Becoming Silty Clay	M	S	0.3	✖	SB1_0.4
	1			Glass pieces and sand					
	1.50			Natural (?): Clay, med plast, yellow/red-brown mottles, moist, firm, with ironstone gravels (<1cm diam)	M	F	0.1	✖	SB1_1.5
				End of hole					
	2								
	2.50								
	3								
	3.50								
	4								
	4.50								
	5								

Produced By:	A.S.
Checked By:	A.S.

Document No:

BOREHOLE LOG

Borehole No: SB2

Sheet 1 of 1

CLIENT:	GJW Consulting Pty Ltd	**JOB NUMBER:**	SES_424
PROJECT:	Limited Phase 2 Environmental Investigation	**DATE COMMENCED:**	28/09/2015
LOCATION:	184-192 Restwell Road, Prairiewood	**DATE COMPLETED:**	28/09/2015
DRILL CONTRACTOR:	N/A	**LOGGED BY:**	A.S.
Drill Model:	N/A	Hole Angle:	Bore Size: RL:
Drilling Fluid:	N/A	Orientation:	Co-ords:

Method/ Casing	Depth (m)	Graphic Log	USCS Classification	Material Description: type, colour/mottling, plasticity/particle size,secondary/minor components, soil origin	Moisture	Consistency	PID	Sampling	Field Records: insitu testing, groundwater observations/regime, well construction details, additional information
Hand Auger				Turf and topsoil					
				Fill: Silty Clay, low plast, brown, moist, soft	M	S	0.0	✖	SB2_0.3
	0.50			Clay, med/high plast, yellow/brown mottled, moist, stiff					
				Green tinges, organic odour, becoming wet, minor blackening	W	St	0.1	✖	SB2_0.8
	1			Natural: Clay, high plast, yellow/green/red mottles, moist, stiff, with ironstone gravels (<2cm diam)					
				End of hole					
	1.50								
	2								
	2.50								
	3								
	3.50								
	4								
	4.50								
	5								

Produced By:	A.S.
Checked By:	A.S.

Document No:

BOREHOLE LOG

Borehole No: SB3

Sheet 1 of 1

CLIENT:	GJW Consulting Pty Ltd	**JOB NUMBER:**	SES_424
PROJECT:	Limited Phase 2 Environmental Investigation	**DATE COMMENCED:**	28/09/2015
LOCATION:	184-192 Restwell Road, Prairiewood	**DATE COMPLETED:**	28/09/2015
DRILL CONTRACTOR:	N/A	**LOGGED BY:**	A.S.
Drill Model:	N/A	Hole Angle:	Bore Size: RL:
Drilling Fluid:	N/A	Orientation:	Co-ords:

Method/ Casing	Depth (m)	Graphic Log	USCS Classification	Material Description: type, colour/mottling, plasticity/particle size,secondary/minor components, soil origin	Moisture	Consistency	PID	Sampling	Field Records: insitu testing, groundwater observations/regime, well construction details, additional information
				Turf and topsoil					
Hand Auger				Fill: Clay, med plast, brown/red/yellow mottles, dry, hard, with gravels (<2cm diam)	D	H	0.1	✖	SB3_0.2 (QC2)
	0.50			Silty Clay, low plast, dark brown, moist, soft, high silt content Green tinges, organic odour, becoming wet					
				End of hole					
	1								
	1.50								
	2								
	2.50								
	3								
	3.50								
	4								
	4.50								
	5								

Produced By:	A.S.
Checked By:	A.S.

Document No:

BOREHOLE LOG

Borehole No: SB4

Sheet 1 of 1

CLIENT:	GJW Consulting Pty Ltd	**JOB NUMBER:**	SES_424
PROJECT:	Limited Phase 2 Environmental Investigation	**DATE COMMENCED:**	29/09/2015
LOCATION:	184-192 Restwell Road, Prairiewood	**DATE COMPLETED:**	29/09/2015
DRILL CONTRACTOR:	N/A	**LOGGED BY:**	A.S.
Drill Model:	N/A	Hole Angle:	Bore Size: RL:
Drilling Fluid:	N/A	Orientation:	Co-ords:

Method/ Casing	Depth (m)	Graphic Log	USCS Classification	Material Description: type, colour/mottling, plasticity/particle size,secondary/minor components, soil origin	Moisture	Consistency	PID	Sampling	Field Records: insitu testing, groundwater observations/regime, well construction details, additional information
Hand Auger				Turf, topsoil and sand					
				Fill: Silty sand with clay lumps					
				Fill: Clay with sand inclusions, med plast, red/grey mottled, moist, stiff/hard (compacted), minor cobble size gravels	M	St	0.1	✖	SB4_0.3
	0.50			Gravelly shale rocks					
				White clay, high plast, moist, stiff, organic layer, paper or plastic bag					
	1			Natural: Silt, low plast, brown/green, wet, soft (old topsoil layer?)					
				End of hole					
	1.50								
	2								
	2.50								
	3								
	3.50								
	4								
	4.50								
	5								

Produced By:	A.S.
Checked By:	A.S.

Document No:

BOREHOLE LOG

Borehole No: SB5

Sheet 1 of 1

CLIENT:	GJW Consulting Pty Ltd	**JOB NUMBER:**	SES_424
PROJECT:	Limited Phase 2 Environmental Investigation	**DATE COMMENCED:**	29/09/2015
LOCATION:	184-192 Restwell Road, Prairiewood	**DATE COMPLETED:**	29/09/2015
DRILL CONTRACTOR:	N/A	**LOGGED BY:**	A.S.
Drill Model:	N/A	Hole Angle:	Bore Size: RL:
Drilling Fluid:	N/A	Orientation:	Co-ords:

Method/ Casing	Depth (m)	Graphic Log	USCS Classification	Material Description: type, colour/mottling, plasticity/particle size,secondary/minor components, soil origin	Moisture	Consistency	PID	Sampling	Field Records: insitu testing, groundwater observations/regime, well construction details, additional information
Hand Auger				Turf, topsoil and sand					
				Fill: Silty sand, uniform, brown, loose, dry					
				Clay and sand mixture					
	0.50			Higher clay content, includes gravels, minor cobbles (>2cm diam)	M	F	0.0	✖	SB5_0.5
				Clay, med plast, red/grey mottled, moist, stiff, minor cobble size gravels					
	1			End of hole					
	1.50								
	2								
	2.50								
	3								
	3.50								
	4								
	4.50								
	5								

Produced By:	A.S.
Checked By:	A.S.

Document No:

BOREHOLE LOG

Borehole No: SB6

Sheet 1 of 1

CLIENT:	GJW Consulting Pty Ltd	**JOB NUMBER:**	SES_424
PROJECT:	Limited Phase 2 Environmental Investigation	**DATE COMMENCED:**	28/09/2015
LOCATION:	184-192 Restwell Road, Prairiewood	**DATE COMPLETED:**	29/09/2015
DRILL CONTRACTOR:	N/A	**LOGGED BY:**	A.S.
Drill Model:	N/A	Hole Angle:	Bore Size: RL:
Drilling Fluid:	N/A	Orientation:	Co-ords:

Method/ Casing	Depth (m)	Graphic Log	USCS Classification	Material Description: type, colour/mottling, plasticity/particle size,secondary/minor components, soil origin	Moisture	Consistency	PID	Sampling	Field Records: insitu testing, groundwater observations/regime, well construction details, additional information
Hand Auger				Turf and topsoil					
				Fill: Gravel and clay mixture, brown/red colouring, dry, hard/compacted, large gravels >2cm diam					
	0.50			Refusal on gravel - move hole 1m south Silty Clay, low plast, yellow, gravelly with shale rocks	D	H	0.0	✖	SB6_0.5
	1			Clay, stiff, brown/grey/red mottles					
				Clay, med plast, red/grey mottles, includes sands and gravels,	M	St	0.1	✖	SB6_1.2
	1.50			End of hole					
	2								
	2.50								
	3								
	3.50								
	4								
	4.50								
	5								

Produced By:	A.S.
Checked By:	A.S.

Document No:

BOREHOLE LOG

Borehole No: SB7

Sheet 1 of 1

CLIENT:	GJW Consulting Pty Ltd	**JOB NUMBER:**	SES_424
PROJECT:	Limited Phase 2 Environmental Investigation	**DATE COMMENCED:**	29/09/2015
LOCATION:	184-192 Restwell Road, Prairiewood	**DATE COMPLETED:**	29/09/2015
DRILL CONTRACTOR:	N/A	**LOGGED BY:**	A.S.
Drill Model:	N/A	Hole Angle:	Bore Size: RL:
Drilling Fluid:	N/A	Orientation:	Co-ords:

Method/ Casing	Depth (m)	Graphic Log	USCS Classification	Material Description: type, colour/mottling, plasticity/particle size,secondary/minor components, soil origin	Moisture	Consistency	PID	Sampling	Field Records: insitu testing, groundwater observations/regime, well construction details, additional information
Hand Auger				Turf and topsoil					
				Fill: Gravelly silty clay mixture, low plast, brown/red colouring, moist, friable					
	0.50			Clay, med plast, dark brown with red flecks, minor gravels,					
				Clay, med/high plast, yellow/grey mottled, red flecks, moist,					
	1			Clay mixture, brown, includes sands and gravels	M	F	0.1	✖	SB7_1.0
				End of hole					
	1.50								
	2								
	2.50								
	3								
	3.50								
	4								
	4.50								
	5								

Produced By:	A.S.
Checked By:	A.S.

Document No:

BOREHOLE LOG

Borehole No: SB8

Sheet 1 of 1

CLIENT:	GJW Consulting Pty Ltd	**JOB NUMBER:**	SES_424
PROJECT:	Limited Phase 2 Environmental Investigation	**DATE COMMENCED:**	29/09/2015
LOCATION:	184-192 Restwell Road, Prairiewood	**DATE COMPLETED:**	29/09/2015
DRILL CONTRACTOR:	N/A	**LOGGED BY:**	A.S.
Drill Model:	N/A	Hole Angle:	Bore Size: RL:
Drilling Fluid:	N/A	Orientation:	Co-ords:

Method/ Casing	Depth (m)	Graphic Log	USCS Classification	Material Description: type, colour/mottling, plasticity/particle size,secondary/minor components, soil origin	Moisture	Consistency	PID	Sampling	Field Records: insitu testing, groundwater observations/regime, well construction details, additional information
Hand Auger				Turf and topsoil					
				Fill: Silty clay mixture, low plast, brown, moist, friable with gravels					
	0.50			Clay and gravel mixture, med plast, yellow/brown, moist, firm					
					M	L	0.0	✖	SB8_0.8
	1			Silty gravel, poor grading, dark brown, moist, loose, prominent black gravels					
				Sand, fine, wet, brown					
				End of hole					
	1.50								
	2								
	2.50								
	3								
	3.50								
	4								
	4.50								
	5								

Produced By:	A.S.
Checked By:	A.S.

Document No:

BOREHOLE LOG

Borehole No: SB9

Sheet 1 of 1

CLIENT:	GJW Consulting Pty Ltd	**JOB NUMBER:**	SES_424
PROJECT:	Limited Phase 2 Environmental Investigation	**DATE COMMENCED:**	29/09/2015
LOCATION:	184-192 Restwell Road, Prairiewood	**DATE COMPLETED:**	29/09/2015
DRILL CONTRACTOR:	N/A	**LOGGED BY:**	A.S.
Drill Model:	N/A	Hole Angle:	Bore Size: RL:
Drilling Fluid:	N/A	Orientation:	Co-ords:

Method/ Casing	Depth (m)	Graphic Log	USCS Classification	Material Description: type, colour/mottling, plasticity/particle size,secondary/minor components, soil origin	Moisture	Consistency	PID	Sampling	Field Records: insitu testing, groundwater observations/regime, well construction details, additional information
Hand Auger				Turf and topsoil					
				Fill: Silty clay mixture, low plast, brown, moist, friable with gravels	M	F	0.2	✖	SB9_0.3
	0.50			Clay and gravel mixture, med plast, yellow/brown, moist, firm					
	1				M	F	0.0	✖	SB9_1.0
				End of hole					
	1.50								
	2								
	2.50								
	3								
	3.50								
	4								
	4.50								
	5								

Produced By:	A.S.
Checked By:	A.S.

Document No:

BOREHOLE LOG

Borehole No: SB10

Sheet 1 of 1

CLIENT:	GJW Consulting Pty Ltd	**JOB NUMBER:**	SES_424
PROJECT:	Limited Phase 2 Environmental Investigation	**DATE COMMENCED:**	29/09/2015
LOCATION:	184-192 Restwell Road, Prairiewood	**DATE COMPLETED:**	29/09/2015
DRILL CONTRACTOR:	N/A	**LOGGED BY:**	A.S.
Drill Model:	N/A	Hole Angle:	Bore Size: RL:
Drilling Fluid:	N/A	Orientation:	Co-ords:

Method/ Casing	Depth (m)	Graphic Log	USCS Classification	Material Description: type, colour/mottling, plasticity/particle size,secondary/minor components, soil origin	Moisture	Consistency	PID	Sampling	Field Records: insitu testing, groundwater observations/regime, well construction details, additional information
Hand Auger				Turf, topsoil and sand					
	0.50			Fill: Clay with sand inclusions, med plast, red/grey mottled, moist, stiff/hard (compacted), minor cobble size gravels	M	St	0.2	✖	SB10_0.9
	1			Natural: Silt, low plast, brown/green, wet, soft (old topsoil layer?)					
				End of hole					
	1.50								
	2								
	2.50								
	3								
	3.50								
	4								
	4.50								
	5								

Produced By:	A.S.
Checked By:	A.S.

Document No:

TEST PIT LOG

TP1

Excavation Contractor:	Ken Coles	Equipment:	3.5 T Excavator	Project Name:	Limited Phase 2 Environmental Investigation
Logged By:	A.S.	Test Pit Length:	2m	Bucket Size:	0.5m
Checked By:	A.S.	Test Pit Width:	0.5m	Relative Level:	mRL
Date Started:	28/9/15			Coordinates:	mN
Date Finished	28/9/15				mE
				Permit No:	N.A.
				Project No:	SES_424
				Client:	GJW Consultancy
				Location:	184-192 Restwell Road, Prairiewood NSW

Method	Support	Penetration (S / M / H / R)	Ground water Data and Comments	Depth (m)	Graphic Log	USCS Classification	DESCRIPTION TYPE; plasticity / particle size (with grading, shape), colour; secondary & minor components (type, proportion, plasticity/particle size, colour); moisture; consistency / density; geologic origin (eg, fill, residual, alluvium); additional observations	Moisture condition	Consistency / Relative Density	Sample Type	PID (ppm)	Sample ID, insitu testing, additional information
Excavator				0.5			Fill: Silty Clay, med. plasticity, brown, with some coarse gravels, large timber pieces, metal sheeting, minor plastic scraps, concrete chunks, fabric straps, minor glass	D	S	Grab	0.1	TP1_0.5 (QC1)
				1.0			End of pit on large metal sheets					
				1.5								
				2.0								
				2.5								
				3.0								
				3.5								
				4.0								
				4.5								
				5.0								

TEST PIT LOG TP2

Excavation Contractor:	Ken Coles	Equipment:	3.5 T Excavator	Project Name:	Limited Phase 2 Environmental Investigation
Logged By:	A.S.	Test Pit Length:	2m	Bucket Size:	0.5m
Checked By:	A.S.	Test Pit Width:	0.5m	Relative Level:	mRL
Date Started:	28/9/15			Coordinates:	mN
Date Finished	28/9/15				mE
				Permit No:	N.A.
				Project No:	SES_424
				Client:	GJW Consultancy
				Location:	184-192 Restwell Road, Prairiewood NSW

Method	Support	Penetration (S / M / H / R)	Ground water Data and Comments	Depth (m)	Graphic Log	USCS Classification	DESCRIPTION TYPE; plasticity / particle size (with grading, shape), colour; secondary & minor components (type, proportion, plasticity/particle size, colour); moisture; consistency / density; geologic origin (eg, fill, residual, alluvium); additional observations	Moisture condition	Consistency / Relative Density	Sample Type	PID (ppm)	Sample ID, insitu testing, additional information
Excavator				0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0			Fill: Silty Clay, med. plasticity, brown/tan, buried chair, plastic scraps, foam, golf ball Layer of bricks at approx. 1.0m Fill: Clay, light brown Natural: Silty Clay, low plast. grey/brown End of pit @ 2m	M	S	Grab	0.0	TP2_1.4

TEST PIT LOG

TP3

Excavation Contractor:	Ken Coles	Equipment:	3.5 T Excavator	Project Name:	Limited Phase 2 Environmental Investigation
Logged By:	A.S.	Test Pit Length:	2m	Bucket Size:	0.5m
Checked By:	A.S.	Test Pit Width:	0.5m	Relative Level:	mRL
Date Started:	28/9/15			Coordinates:	mN
Date Finished	28/9/15				mE
				Permit No:	N.A.
				Project No:	SES_424
				Client:	GJW Consultancy
				Location:	184-192 Restwell Road, Prairiewood NSW

Method	Support	Penetration (S / M / H / R)	Ground water Data and Comments	Depth (m)	Graphic Log	USCS Classification	DESCRIPTION TYPE; plasticity / particle size (with grading, shape), colour; secondary & minor components (type, proportion, plasticity/particle size, colour); moisture; consistency / density; geologic origin (eg, fill, residual, alluvium); additional observations	Moisture condition	Consistency / Relative Density	Sample Type	PID (ppm)	Sample ID, insitu testing, additional information
Excavator				0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0			Fill: Silty Clay, low plasticity, brown, dry, concrete chunks, glass/plastic bottles, rubber hose, wire, cardboard, metal cans, scrap metal and sheeting, steel pickets, End of pit @ 1.3m	D	S	Grab	0.0	TP3_0.4

TEST PIT LOG

TP4

Excavation Contractor:	Ken Coles	Equipment:	3.5 T Excavator	Project Name:	Limited Phase 2 Environmental Investigation
Logged By:	A.S.	Test Pit Length:	2m	Bucket Size:	0.5m
Checked By:	A.S.	Test Pit Width:	0.5m	Relative Level:	mRL
Date Started:	28/9/15			Coordinates:	mN
Date Finished	28/9/15				mE
				Permit No:	N.A.
				Project No:	SES_424
				Client:	GJW Consultancy
				Location:	184-192 Restwell Road, Prairiewood NSW

Method	Support	Penetration (S / M / H / R)	Ground water Data and Comments	Depth (m)	Graphic Log	USCS Classification	DESCRIPTION TYPE; plasticity / particle size (with grading, shape), colour; secondary & minor components (type, proportion, plasticity/particle size, colour); moisture; consistency / density; geologic origin (eg, fill, residual, alluvium); additional observations	Moisture condition	Consistency / Relative Density	Sample Type	PID (ppm)	Sample ID, insitu testing, additional information
Excavator				0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0			Fill: Silty Clay, low plasticity, brown, dry, with minor refuse (brick, bitumen, shale rock) Metal sheeting End of pit @ 2.1m	D	S	Grab	0.2	TP4_1.0

TEST PIT LOG

TP5A

Excavation Contractor:	Ken Coles	Equipment:	3.5 T Excavator	Project Name:	Limited Phase 2 Environmental Investigation
Logged By:	A.S.	Test Pit Length:	2m	Bucket Size:	0.5m
Checked By:	A.S.	Test Pit Width:	0.5m	Relative Level:	mRL
Date Started:	28/9/15			Coordinates:	mN
Date Finished	28/9/15				mE
				Permit No:	N.A.
				Project No:	SES_424
				Client:	GJW Consultancy
				Location:	184-192 Restwell Road, Prairiewood NSW

Method	Support	Penetration (S / M / H / R)	Ground water Data and Comments	Depth (m)	Graphic Log	USCS Classification	DESCRIPTION TYPE; plasticity / particle size (with grading, shape), colour; secondary & minor components (type, proportion, plasticity/particle size, colour); moisture; consistency / density; geologic origin (eg, fill, residual, alluvium); additional observations	Moisture condition	Consistency / Relative Density	Sample Type	PID (ppm)	Sample ID, insitu testing, additional information
Excavator				0.5			Fill: Silty Clay, low plasticity, brown, moist, roots, with minor coarse gravels, scrap rubbish, rubber hose	M	F	Grab	0.1	TP5A_0.8
				1.0								
				1.5			End of pit @ 1.4m					
				2.0								
				2.5								
				3.0								
				3.5								
				4.0								
				4.5								
				5.0								

TEST PIT LOG

TP5B

Excavation Contractor:	Ken Coles	Equipment:	3.5 T Excavator	Project Name:	Limited Phase 2 Environmental Investigation
Logged By:	A.S.	Test Pit Length:	2m	Bucket Size:	0.5m
Checked By:	A.S.	Test Pit Width:	0.5m	Relative Level:	mRL
Date Started:	28/9/15			Coordinates:	mN
Date Finished	28/9/15				mE
				Permit No:	N.A.
				Project No:	SES_424
				Client:	GJW Consultancy
				Location:	184-192 Restwell Road, Prairiewood NSW

Method	Support	Penetration (S / M / H / R)	Ground water Data and Comments	Depth (m)	Graphic Log	USCS Classification	DESCRIPTION TYPE; plasticity / particle size (with grading, shape), colour; secondary & minor components (type, proportion, plasticity/particle size, colour); moisture; consistency / density; geologic origin (eg, fill, residual, alluvium); additional observations	Moisture condition	Consistency / Relative Density	Sample Type	PID (ppm)	Sample ID, insitu testing, additional information
Excavator				0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0			Fill: Silty Clay, low plasticity, brown, dry, soft, minor concrete chunks, timber pieces Large block of black mortar Fill: Clay, low plast, dark grey/black Fill: Clay, med plast, white with gravels, End of pit @ 2.0m	M	F	Grab	0.2	TP5B_1.5

TEST PIT LOG

TP6A

Excavation Contractor:	Ken Coles	Equipment:	3.5 T Excavator	Project Name:	Limited Phase 2 Environmental Investigation
Logged By:	A.S.	Test Pit Length:	2m	Bucket Size:	0.5m
Checked By:	A.S.	Test Pit Width:	0.5m	Relative Level:	mRL
Date Started:	28/9/15			Coordinates:	mN
Date Finished	28/9/15				mE
				Permit No:	N.A.
				Project No:	SES_424
				Client:	GJW Consultancy
				Location:	184-192 Restwell Road, Prairiewood NSW

Method	Support	Penetration (S / M / H / R)	Groundwater Data and Comments	Depth (m)	Graphic Log	USCS Classification	DESCRIPTION TYPE; plasticity / particle size (with grading, shape), colour; secondary & minor components (type, proportion, plasticity/particle size, colour); moisture; consistency / density; geologic origin (eg, fill, residual, alluvium); additional observations	Moisture condition	Consistency / Relative Density	Sample Type	PID (ppm)	Sample ID, insitu testing, additional information
Excavator				0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0			Fill: Silty Clay, low plasticity, brown, dry to moist, 5x concrete chunks, metal picket, rubber hose, minor plastic scrap in top 1m Natural: Clay, med. plast, grey/white, minor silt, moist End of pit @ 1.7m					No sample

TEST PIT LOG

TP6B

Excavation Contractor:	Ken Coles	Equipment:	3.5 T Excavator	Project Name:	Limited Phase 2 Environmental Investigation
Logged By:	A.S.	Test Pit Length:	2m	Bucket Size:	0.5m
Checked By:	A.S.	Test Pit Width:	0.5m	Relative Level:	mRL
Date Started:	28/9/15			Coordinates:	mN
Date Finished	28/9/15				mE
				Permit No:	N.A.
				Project No:	SES_424
				Client:	GJW Consultancy
				Location:	184-192 Restwell Road, Prairiewood NSW

Method	Support	Penetration (S / M / H / R)	Groundwater Data and Comments	Depth (m)	Graphic Log	USCS Classification	DESCRIPTION TYPE; plasticity / particle size (with grading, shape), colour; secondary & minor components (type, proportion, plasticity/particle size, colour); moisture; consistency / density; geologic origin (eg, fill, residual, alluvium); additional observations	Moisture condition	Consistency / Relative Density	Sample Type	PID (ppm)	Sample ID, insitu testing, additional information
Excavator				0.5			Fill: Silty Clay, low plasticity, brown, moist, timber pieces, plastic scrap, mesh fencing	M	F	Grab	0.1	TP6B_0.4
				1.0			End of pit @ 0.5m					
				1.5								
				2.0								
				2.5								
				3.0								
				3.5								
				4.0								
				4.5								
				5.0								

TEST PIT LOG

TP7A

Excavation Contractor:	Ken Coles	Equipment:	3.5 T Excavator	Project Name:	Limited Phase 2 Environmental Investigation
Logged By:	A.S.	Test Pit Length:	2m	Bucket Size:	0.5m
Checked By:	A.S.	Test Pit Width:	0.5m	Relative Level:	mRL
Date Started:	28/9/15			Coordinates:	mN
Date Finished	28/9/15				mE
				Permit No:	N.A.
				Project No:	SES_424
				Client:	GJW Consultancy
				Location:	184-192 Restwell Road, Prairiewood NSW

Method	Support	Penetration (S / M / H / R)	Groundwater Data and Comments	Depth (m)	Graphic Log	USCS Classification	DESCRIPTION TYPE; plasticity / particle size (with grading, shape), colour; secondary & minor components (type, proportion, plasticity/particle size, colour); moisture; consistency / density; geologic origin (eg, fill, residual, alluvium); additional observations	Moisture condition	Consistency / Relative Density	Sample Type	PID (ppm)	Sample ID, insitu testing, additional information
Excavator				0.5			Fill: Silty Clay, low plasticity, brown, dry, white substance (fungus), large rusted metal pipe, large concrete block, washing line pole, timber, tree branches	D	F	Grab	0.0	TP7A_0.3
				1.0			End of pit @ 0.5m					
				1.5								
				2.0								
				2.5								
				3.0								
				3.5								
				4.0								
				4.5								
				5.0								

TEST PIT LOG

TP7B

Excavation Contractor:	Ken Coles	Equipment:	3.5 T Excavator	Project Name:	Limited Phase 2 Environmental Investigation
Logged By:	A.S.	Test Pit Length:	2m	Bucket Size:	0.5m
Checked By:	A.S.	Test Pit Width:	0.5m	Relative Level:	mRL
Date Started:	28/9/15			Coordinates:	mN
Date Finished	28/9/15				mE
				Permit No:	N.A.
				Project No:	SES_424
				Client:	GJW Consultancy
				Location:	184-192 Restwell Road, Prairiewood NSW

Method	Support	Penetration (S / M / H / R)	Groundwater Data and Comments	Depth (m)	Graphic Log	USCS Classification	DESCRIPTION TYPE; plasticity / particle size (with grading, shape), colour; secondary & minor components (type, proportion, plasticity/particle size, colour); moisture; consistency / density; geologic origin (eg, fill, residual, alluvium); additional observations	Moisture condition	Consistency / Relative Density	Sample Type	PID (ppm)	Sample ID, insitu testing, additional information
Excavator				0.5			Fill: Silty Clay, low plasticity, light brown, dry, concrete chunks, broken pvc conduit pipe End of pit @ 0.5m on existing ground level					No sample
				1.0								
				1.5								
				2.0								
				2.5								
				3.0								
				3.5								
				4.0								
				4.5								
				5.0								

TEST PIT LOG

TP8

Excavation Contractor:	Ken Coles	Equipment:	3.5 T Excavator	Project Name:	Limited Phase 2 Environmental Investigation
Logged By:	A.S.	Test Pit Length:	2m	Bucket Size:	0.5m
Checked By:	A.S.	Test Pit Width:	0.5m	Relative Level:	mRL
Date Started:	28/9/15			Coordinates:	mN
Date Finished	28/9/15				mE
				Permit No:	N.A.
				Project No:	SES_424
				Client:	GJW Consultancy
				Location:	184-192 Restwell Road, Prairiewood NSW

Method	Support	Penetration (S / M / H / R)	Groundwater Data and Comments	Depth (m)	Graphic Log	USCS Classification	DESCRIPTION TYPE; plasticity / particle size (with grading, shape), colour; secondary & minor components (type, proportion, plasticity/particle size, colour); moisture; consistency / density; geologic origin (eg, fill, residual, alluvium); additional observations	Moisture condition	Consistency / Relative Density	Sample Type	PID (ppm)	Sample ID, insitu testing, additional information
Excavator				0.5			Fill: Silty Clay, low plasticity, dark brown, loamy texture, moist	M	F	Grab	0.0	TP8_0.4
				1.0			Fill: Hardened concrete slurry and aggregate					
				1.5			Natural: Silty Clay (existing ground)					
				2.0			End of pit on existing ground level					
				2.5								
				3.0								
				3.5								
				4.0								
				4.5								
				5.0								

D

Appendix D Site Photos

Photo 1: Facing north - Main building used as a sports clubhouse.

Photo 2: Facing northwest – Site is used as a car park across much of the open spaces.

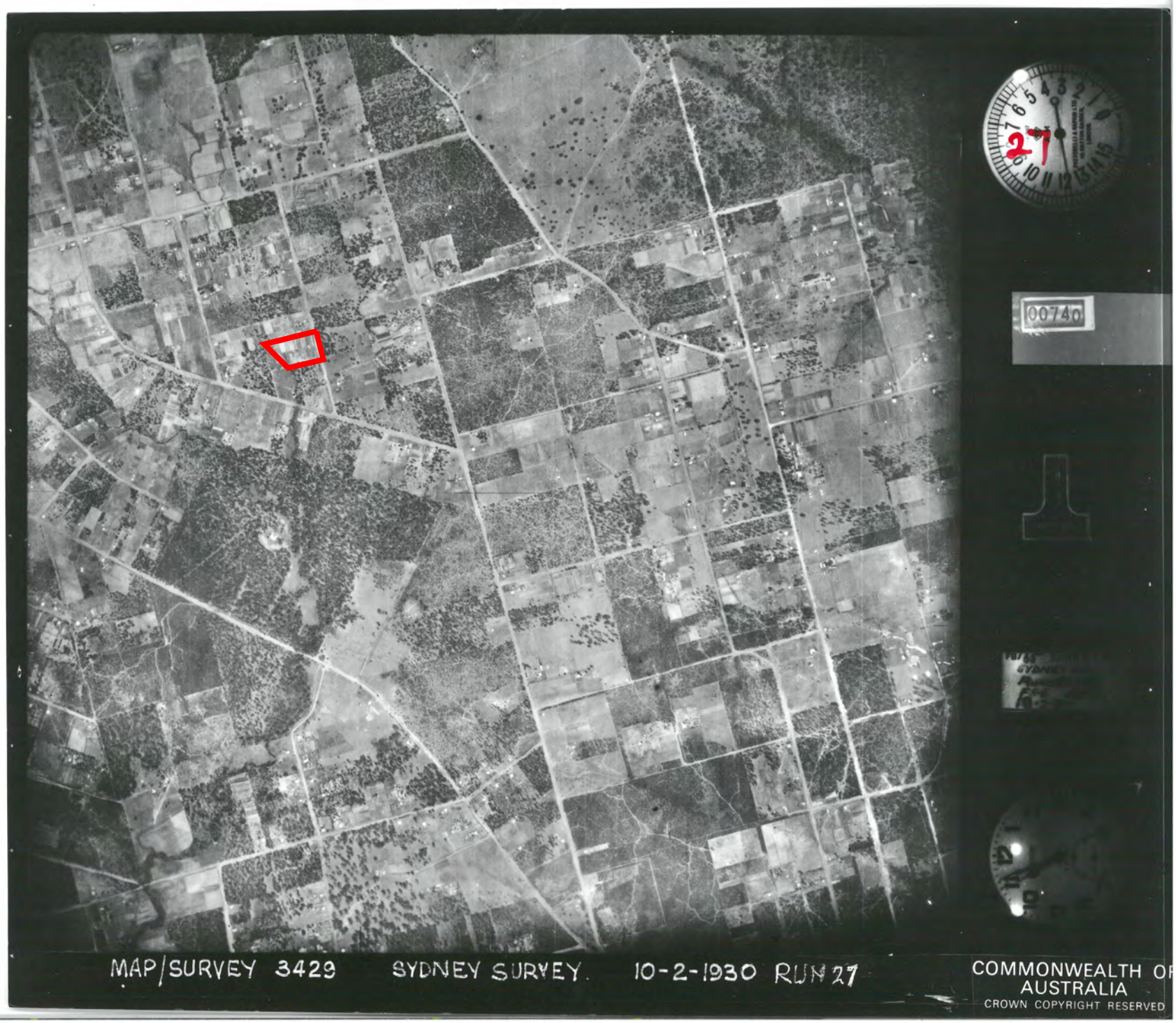
Photo 3: Facing south – The northern end of the soil mounds with the eastern boundary fence to the left. Note concrete slurry aggregate waste.

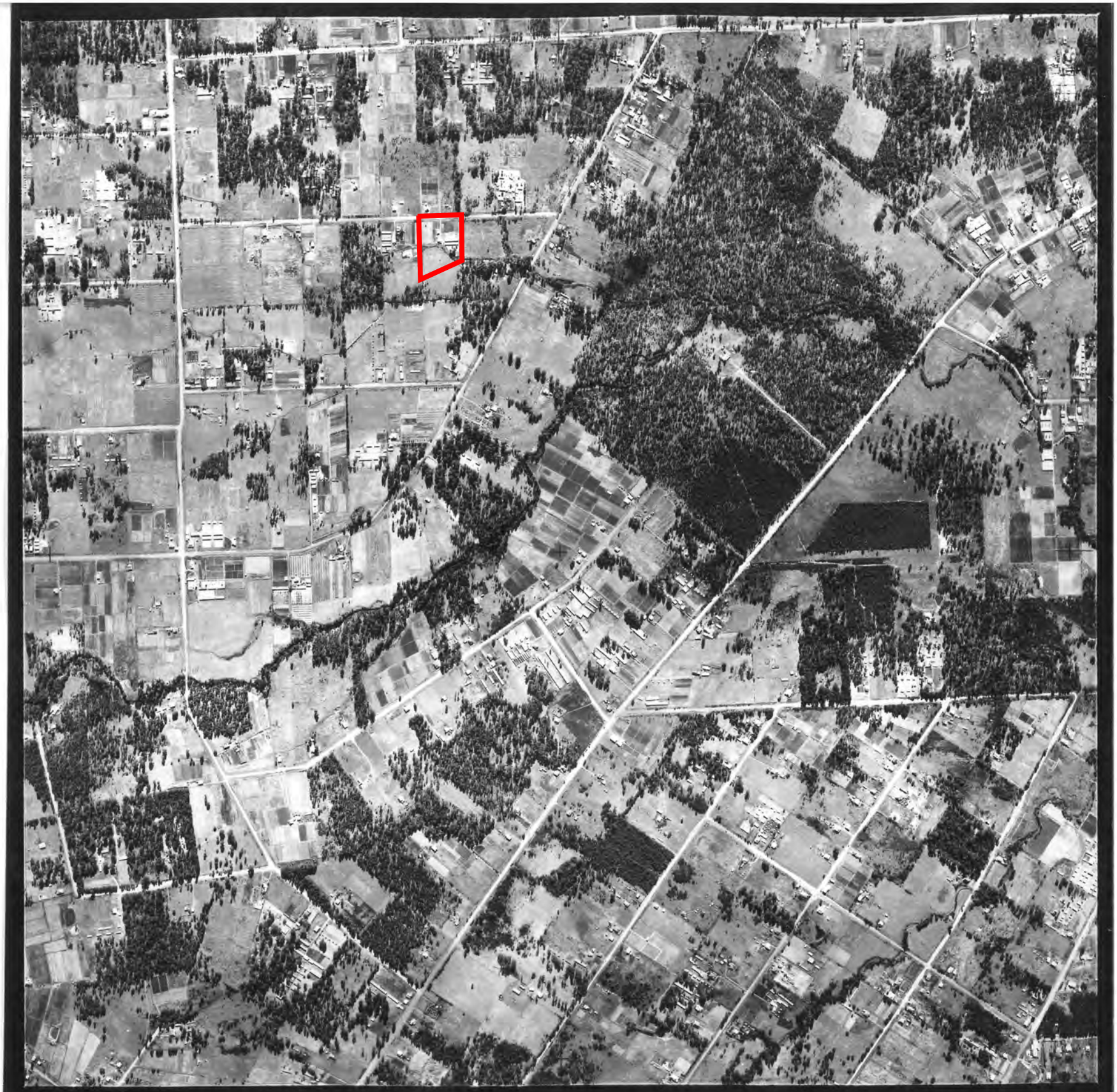
Photo 4: Facing southwest – Test pit 1 (TP1) example of waste types in the soil mounds.

Photo 5: Test pit 6B (TP6B) where asbestos was detected. There were no obvious potential asbestos containing materials present such as fibro sheeting. Other anthropogenic waste materials are present.

Photo 6: Facing south – Test pit 2 (TP2) example of waste materials buried in the soil mounds. Riparian zone is in the background.

Appendix E Aerial Imagery


27
00740
MAP/SURVEY 3429 SYDNEY SURVEY. 10-2-1930 RUN 27
COMMONWEALTH OF AUSTRALIA
CROWN COPYRIGHT RESERVED



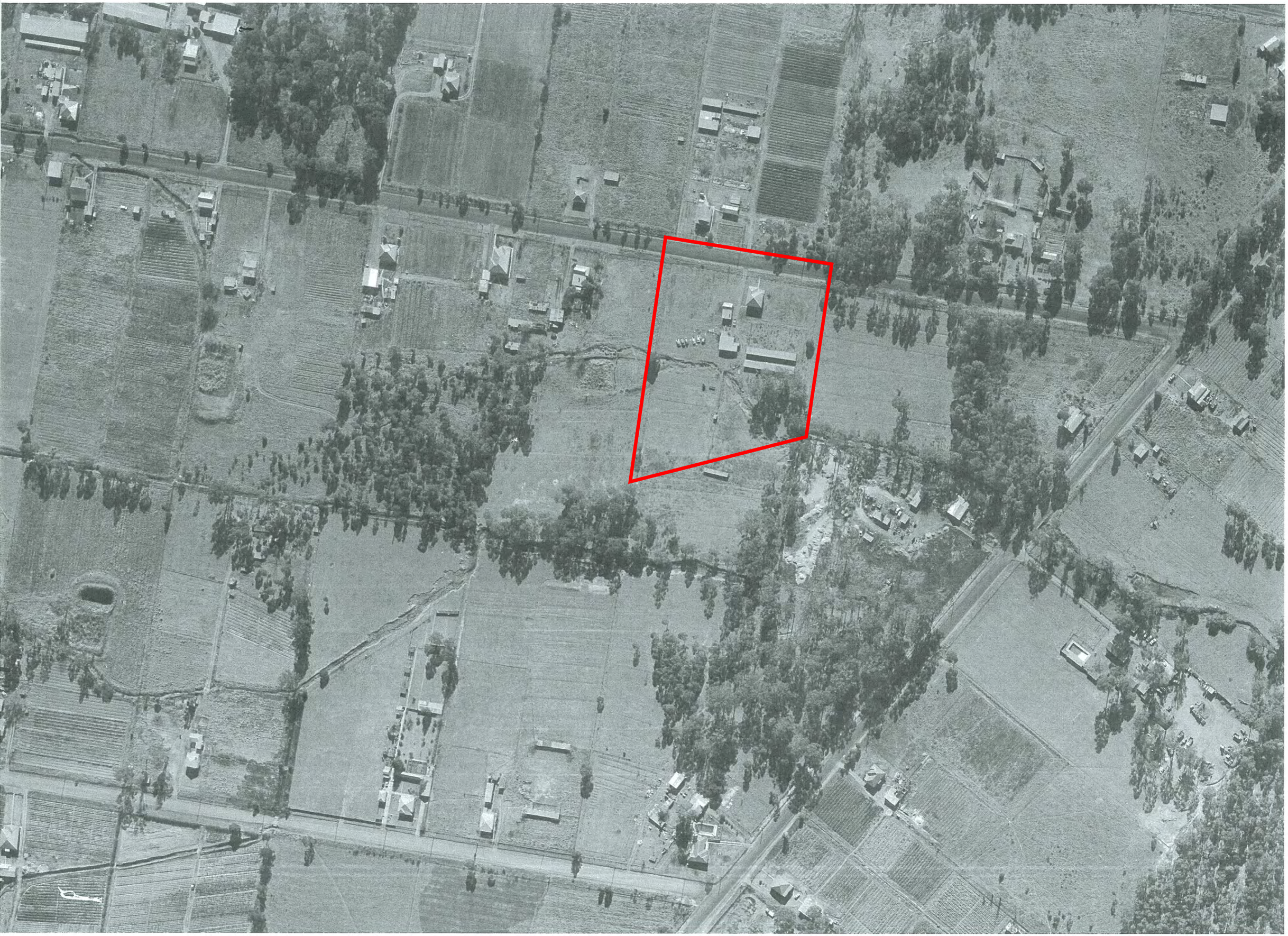
480 - 59

LIVERPOOL (CO.C'LAND) RUN 13 ↑ MAY51 12" 12200

LANDS PHOTO


NSW
1050
5123
Cumberland
1961 SERIES
Run 34
LANDS
PHOTO


UAg 1001 152.37
N.S.W.
1909
5136
CUMBERLAND
1970 SERIES
RUN 17
7-7-70
7.500 AS·L
152.37M·M
NSW 1909
CROWN
COPY N.S.W
LANDS PHOTO
LOG-E
IST COPY



NSW
3241
158

SYDNEY 1982
1:16 000 COLOUR
(MISC. 1474) NSW 3241

RUN 22
9.8.82

2560m ASL
151.45mm


PENRITH
1:25000 Approx. Scale
NSW4244 (Colour)
RUN 10
04-10-94
178-199
4054M ASL
152.76mm

Google earth

feet 600
meters 200

Google earth

feet 600
meters 200

Google earth

feet 500
meters 100

Google earth

feet 600
meters 200

Google earth

feet 700
meters 200

Google earth

feet 700
meters 200

F

Appendix F Section 149 Certificate

Fairfield City Council, Administration Centre, 86 Avoca Road, Wakeley 2176
Tel: (02) 9725 0222 Fax: (02) 9725 4249 ABN: 83 140 439 239
All communications to:
Fairfield City Council, PO Box 21, Fairfield NSW 1860
Email address: mail@fairfieldcity.nsw.gov.au

1 October 2015

Sullivan Environmental Services Pty Ltd
PO Box 5248
TURRAMURRA NSW 2074

Dear Sir/ Madam

Following is your Planning Certificate as requested. Should you have any further queries please contact Council's City and Community Development Group on (02) 9725 0821.

PLANNING CERTIFICATE
(under section 149 of the Environmental Planning and Assessment Act 1979 as amended)

Applicant:	**Sullivan Environmental Services Pty Ltd**
Certificate No.:	**35598/2015**
Applicant's Reference:	**Adam Sullivan**
Issue Date:	**1 October 2015**
Receipt No.:	**2348080**

PROPERTY ADDRESS:	**184-192 Restwell Road PRAIRIEWOOD**
LEGAL DESCRIPTION:	**Lot: 7 Sec: E DP: 6934**

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for
Alan Young
City Manager
Fairfield City Council

PLEASE NOTE: This is page 1 of 21. Should this Planning Certificate or any subsequent copy not contain this many pages, please confirm with Council prior to acting on the basis of information contained in this certificate.

Information provided under
Section 149(2) of the Environmental Planning and Assessment Act 1979

Notes:

(1) The following prescribed matters may apply to the land to which this certificate relates.

(2) Where this certificate refers to a specific allotment (or allotments) within a strata plan, the certificate is issued for the whole of the land within the strata plan, not just the specific allotment(s) referred to, and any information contained in the certificate may relate to the whole, or any part, of the strata plan.

(3) The following information is provided pursuant to Section 149(2) of the Environmental Planning and Assessment Act 1979 as prescribed by Schedule 4 of the Environmental Planning and Assessment Regulation 2000 and is applicable as at the date of this certificate.

(4) Information provided in this certificate should be interpreted in conjunction with the relevant plans, policies and documents held at Council. In order to obtain copies of these documents you may purchase them by either contacting Council's City and Community Development Group on (02) 9725 0821 or attending Council's Administration Centre at 86 Avoca Road, Wakeley.

---

1. Names of relevant planning instruments and DCPs

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

State Environmental Planning Policies (SEPP)

SEPP (Major Development) 2005

SEPP (Miscellaneous Consent Provisions) 2007

SEPP No. 50 - Canal Estate Development

SEPP No. 19 - Bushland in Urban Areas

SEPP No. 32 - Urban Consolidation (Redevelopment of Urban Land)

SEPP (State and Regional Development) 2011

SEPP No. 33 - Hazardous and Offensive Development

SEPP No. 64 - Advertising and Signage

SEPP (Repeal of Concurrence and Referral Provisions) 2008

SEPP No. 55 - Remediation of Land

SEPP No. 65 - Design Quality of Residential Flat Development

SEPP (Affordable Rental Housing) 2009

SEPP (Mining, Petroleum Production and Extractive Industries) 2007

SEPP No. 62 - Sustainable Aquaculture

SEPP (Infrastructure) 2007

SEPP (Exempt and Complying Development Codes) 2008

Regional Environmental Plans (Deemed SEPP)

Sydney Regional Environmental Plan No. 9 - Extractive Industry (No 2-1995)

The Greater Metropolitan Regional Environmental Plan No. 2 - Georges River Catchment

Local Environmental Plans (LEP)

Fairfield Local Environmental Plan 2013
Published on NSW Legislation Website: 17/05/2013.
In Force from: 31/05/2013.
As Amended.

(2) The name of each proposed environmental planning instrument that will apply to the carrying out of development on the land and that is or has been the subject of community consultation or on public exhibition under the Act (unless the Director-General has notified the council that the making of the proposed instrument has been deferred indefinitely or has not been approved)

Draft SEPP (Competition) 2010

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

The land is subject to adopted Development Control Plans. (See attached schedule).

The Prairiewood Town Centre Masterplan applies to this land. The Masterplan provides the strategic direction for future development of the site with a focus on integrated mix of housing, employment and cultural activities; whilst providing a high degree of non-vehicular movement linking the transport, community facilities, institutions and shops and places of employment with respect to the natural landscape.

(4) In this clause, proposed environmental planning instrument includes a planning proposal for a LEP or a draft environmental planning instrument.

2. Zoning and land use under relevant LEP

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

(a) WHAT IS THE IDENTITY OF THE ZONE?

Zone RE1 Public Recreation

(b) WHAT IS PERMITTED WITHOUT DEVELOPMENT CONSENT?

Environmental protection works; Markets.

(c) WHAT IS PERMITTED ONLY WITH DEVELOPMENT CONSENT?

Boat building and repair facilities; Boat launching ramps; Boat sheds; Building identification signs; Business identification signs; Camping grounds; Caravan parks; Charter and tourism boating facilities; Community facilities; Environmental facilities; Flood mitigation works; Function centres; Heliports; Information and education facilities; Jetties; Kiosks; Marinas; Mooring pens; Moorings; Recreation areas; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Restaurants or cafes; Roads; Water recreation structures; Water recycling facilities; Water supply systems; Wharf or boating facilities.

(d) WHAT IS PROHIBITED?

Any development not specified in item (b) or (c).

(a) WHAT IS THE IDENTITY OF THE ZONE?

Zone B4 Mixed Use

(b) WHAT IS PERMITTED WITHOUT DEVELOPMENT CONSENT?

Environmental protection works; Home-based child care; Home occupations.

(c) WHAT IS PERMITTED ONLY WITH DEVELOPMENT CONSENT?
Boarding houses; Child care centres; Commercial premises; Community facilities; Educational establishments; Entertainment facilities; Function centres; Hotel or motel accommodation; Information and education facilities; Medical centres; Passenger transport facilities; Recreation facilities (indoor); Registered clubs; Respite day care centres; Restricted premises; Roads; Seniors housing; Shop top housing; Any development not specified in item (b) or (d).

(d) WHAT IS PROHIBITED?
Agriculture; Air transport facilities; Airstrips; Animal boarding or training establishments; Attached dwellings; Biosolids treatment facilities; Boat building and repair facilities; Boat launching ramps; Boat sheds; Camping grounds; Caravan parks; Cemeteries; Charter and tourism boating facilities; Crematoria; Depots; Dual occupancies; Dwelling houses; Eco-tourist facilities; Environmental facilities; Exhibition villages; Extractive industries; Farm buildings; Farm stay accommodation; Forestry; Freight transport facilities; Heavy industrial storage establishments; Helipads; Home businesses; Home industries; Home occupations (sex services); Industrial retail outlets; Industrial training facilities; Industries; Jetties; Marinas; Mooring pens; Moorings; Mortuaries; Multi dwelling housing; Open cut mining; Recreation facilities (major); Research stations; Resource recovery facilities; Rural industries; Rural workers' dwellings; Secondary dwellings; Semi-detached dwellings; Sewage treatment plants; Sex services premises; Storage premises; Transport depots; Truck depots; Vehicle body repair workshops; Warehouse or distribution centres; Waste disposal facilities; Water recreation structures; Water recycling facilities;
Water supply systems; Wharf or boating facilities; Wholesale supplies.

Additional uses that are permitted with development consent.

There are no additional uses permitted with consent.

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

No development standards that fix the minimum land dimensions for the erection of a dwelling house apply to this land. Controls in other policies and plans may apply.

(f) Whether the land includes or comprises critical habitat.

No.

(g) Whether the land is in a conservation area (however described).

No

(h) Whether an item of environmental heritage (however described) is situated on the land.

No.

Attention is drawn however to Clause 5.10(5) of Fairfield Local Environmental Plan 2013:
"The consent authority may, before granting consent to any development:
(a) on land on which a heritage item is located, or
(b) on land that is within a heritage conservation area, or
(c) on land that is within the vicinity of land referred to in paragraph (a) or (b),
require a heritage management document to be prepared to assess the extent to which the carrying out of the proposed development would affect the heritage significance of the heritage item or heritage conservation area concerned."

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

Not applicable.

3. Complying development

(1) The extent to which the land is land on which complying development may be carried out under each of the codes for complying development because of the provisions of clauses 1.17A (1) (c) to (e), (2), (3) and (4) 1.18 (1) (c3) and 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

General Housing Code:
No. The General Housing Code does not apply to this land.

Housing Alterations Code:
Complying development under the Housing Alterations Code may only be carried out on that part of the land zoned B4.

Commercial and Industrial Alterations Code:
Complying development under the Commercial and Industrial Alterations Code may only be carried out on that part of the land zoned B4.

Commercial and Industrial (New Buildings and Additions) Code:
Complying Development under the Commercial and Industrial (New Buildings and Additions) Code may only be carried out on that part of the land zoned B4.

Subdivision Code:
Complying development under the Subdivision Code may only be carried out on that part of the land zoned B4.

Rural Housing Code:
No. The Rural Housing Code does not apply to this land.

General Development Code:
Complying development under the General Development Code may only be carried out on that part of the land zone B4.

Demolition Code:
Complying development under the Demolition Code may only be carried out on that part of the land zoned B4.

Fire Safety Code:
Complying development under the Fire Safety Code may only be carried out on that part of the land zoned B4.

(2) The extent to which complying development may not be carried out on that land because of the provisions of clauses 1.17A (1) (c) to (e), (2), (3) and (4), 1.18 (1) (c3) and 1.19 of that Policy and the reasons why it may not be carried out under those clauses.

Complying Development may not be carried out on that part of the land zoned RE1 – Public Recreation and is reserved for a public purpose.

(3) If the council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land, a statement that a restriction applies to the land, but it may not apply to all of the land, and that council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land.

Council does not have any relevant statement to make in relation to any further restrictions that may apply to complying development being carried out on the land. All information in relation to the extent that complying development can be carried out on the land is provided under Part 3(1) & (2) of this certificate.

Note: *Clause 3 refers only to land based exclusions as listed in Clauses 1.17A (1)(c) to (e), (2), (3) and (4), 1.18 (1) (c3) and 1.19 of the SEPP (Exempt and Complying Development Codes) 2008. To be complying development, the development must be complying development that meets the standards and other requirements specified for that development as required by the SEPP. Please contact your accredited certifier or Council for further information.*

4. Coastal Protection

Whether or not the land is affected by the operation of section 38 or 39 of the *Coastal Protection Act* 1979, but only to the extent that the council has been notified by the Department of Public Works.

No, this land is not affected.

4A Information relating to beaches and coasts

(1) Whether an order has been made under Part 4D of the Coastal Protection Act 1979 in relation to emergency coastal protection works (within the meaning of that Act) on the land (or on public land adjacent to that land), except where the council is satisfied that such an order has been fully complied with.

No order under Part 4D of the *Coastal Protection Act 1979*, has been made.

(2)

1. whether the council has been notified under section 55X of the Coastal Protection Act 1979 that emergency coastal protection works (within the meaning of that Act) have been placed on the land (or on public land adjacent to that land), and

   Council has not received any such notification.

2. if works have been so placed—whether the council is satisfied that the works have been removed and the land restored in accordance with that Act.

   Not applicable.

(3) such information (if any) as is required by the regulations under section 56B of the Coastal Protection Act 1979 to be included in the planning certificate and of which the council has been notified pursuant to those regulations.

No such information is available.

4B Annual charges for coastal protection services under *Local Government Act 1993.*

Whether the owner (or any previous owner) of the land has consented in writing to the land being subject to annual charges under section 496B of the Local Government Act 1993 for coastal protection services that relate to existing coastal protection works (within the meaning of section 553B of that Act).

Note: "Existing coastal protection works" are works to reduce the impact of coastal hazards on land (such as seawalls, revetments, groynes and beach nourishment) that existed before the commencement of section 553B of the Local Government Act 1993.

No annual charges under section 553B of the *Local Government Act 1993*, are applicable to the land.

5. Mine Subsidence

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

No, this land is not affected.

6. Road widening and road realignment

Whether or not the land is affected by any road widening or road realignment under Division 2 or Part 3 of the *Roads Act* 1993, any environmental planning instrument, or any resolution of the council.

The land is not affected by any road widening proposal under Division 2 of Part 3 of the Roads Act or Fairfield Local Environmental Plan 2013.

The land is affected by provisions restricting vehicular access. For further details contact Council's City Services Department.

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

Whether or not the land is affected by a policy:

(b) adopted by the council, or

(c) adopted by any other public authority and notified to the council for the express purpose of its adoption by that authority being referred to in planning certificates issued by the council,

that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulfate soils or any other risk, other than flooding.

Council's policies on hazard risk restrictions are as follows:

(i) Landslip

Under Fairfield Local Environmental Plan 2013, the land is not affected by a policy adopted by Council or adopted by any other public authority and notified to Council (for the express purpose of its adoption by that authority being referred to in Planning Certificates issued by Council) that restricts development on the land because of the likelihood of landslide risk or subsidence.

(ii) Bushfire

Council has been supplied by the NSW Rural Fire Service with a hazard map for the purposes of a bush fire risk management plan applying to land within the Fairfield local government area. Based on that map, it appears the land referred to in this certificate is not bush fire prone as defined in section 4 of the Environmental Planning and Assessment Act 1979.

(iii) Tidal Inundation

The land is not affected by a policy adopted by Council or adopted by any other public authority and notified to Council (for the express purpose of its adoption by that authority being referred to in Planning Certificates issued by Council) that restricts development on the land because of the likelihood of tidal inundation.

(iv) Subsidence

No, the land is not so affected

(v) Acid Sulfate Soils

The land is not affected by a policy adopted by Council or adopted by any other public authority and notified to Council (for the express purpose of its adoption by that authority being referred to in Planning Certificates issued by Council) that restricts development on the land because of the likelihood of acid sulfate soils.

(vi) **Any other risks**

No, the land is not so affected

7A. Flood related development controls information

1. Whether or not development on that land or part of the land for the purposes of dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) is subject to flood related development controls.

This land is subject to the flood related development controls included in the Fairfield City-Wide Development Control Plan 2013 in relation to the above development types. These controls apply (either directly, or indirectly by reference in site-specific DCPs) to all land in the Fairfield Local Government Area.

Generally, development controls will apply to development if the land (or part of the land) is within the floodplain or is affected by overland flooding.

Based on the information currently available to Council, this land is not affected by mainstream flooding. However, this is subject to future flood studies and reviews.

Part or all of this land is within the floodplain and may be affected by local overland flooding. This parcel is not in an area in which Council's current programme of overland flood risk mapping has been completed. The term local overland flooding means inundation by local runoff rather than overbank discharge from a stream, river, estuary, lake or dam.

2. Whether or not development on that land or part of the land for any other purpose is subject to flood related development controls.

This land is subject to the flood related development controls included in the Fairfield City-Wide Development Control Plan 2013 in relation to the above development types. These controls apply (either directly, or indirectly by reference in site-specific DCPs) to all land in the Fairfield Local Government Area.

Generally, development controls will apply to development if the land (or part of the land) is within the floodplain or is affected by overland flooding.

Based on the information currently available to Council, this land is not affected by mainstream flooding. However, this is subject to future flood studies and reviews.

Part or all of this land is within the floodplain and may be affected by local overland flooding. This parcel is not in an area in which Council's current programme of overland flood risk mapping has been completed. The term local overland flooding means inundation by local runoff rather than overbank discharge from a stream, river, estuary, lake or dam.

The flood information is the current information to date. However, Council reviews flood studies on an on-going basis and new information may become available in future. Please contact Council's Natural Resources Branch on 9725 0222 for any updated information.

Note:

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

8. Land reserved for acquisition

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

The land is not reserved for acquisition under Fairfield Local Environmental Plan 2013.

9. Contributions plans

The name of each contributions plan applying to the land.

Fairfield City Council Direct (Section 94) Development Contributions Plan 2011 applies to this land.

Fairfield City Council Indirect (Section 94A) Development Contributions Plan 2011 applies to all land within the City of Fairfield.

9A. Biodiversity certified land

Is the land biodiversity certified land (within the meaning of Part 7AA of the Threatened Species Conservation Act 1995?

The land is not biodiversity certified land.

10. Biobanking agreements

If the land is land to which a biobanking agreement under Part 7A of the Threatened Species Conservation Act 1995 relates, a statement to that effect (but only if the council has been notified of the existence of the agreement by the Director-General of the Department of Environment, Climate Change and Water).

No such agreement applies to the land.

11. Bush fire prone land

Whether all, or part, of the land is bush fire prone land (as defined in the Environmental Planning and Assessment Act 1979).

Council has been supplied by the NSW Rural Fire Service with a hazard map for the purposes of a bush fire risk management plan applying to land within the Fairfield local government area. Based on that map, it appears the land referred to in this certificate is not bush fire prone as defined in section 4 of the Environmental Planning and Assessment Act 1979.

12. Property vegetation plans

Whether or not the land is land to which a property vegetation plan under the Native Vegetation Act 2003 applies (but only if the council has been notified of the existence of the plan by the person or body that approved the plan under the Act).

No

13. Orders under Trees (Disputes between Neighbours) Act 2006

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

No

14. Directions under Part 3A

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

No such direction applies to the land.

15. Site compatibility certificates and conditions for seniors housing

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

(a) a statement of whether there is a current site compatibility certificate (seniors housing),of which the council is aware in respect of proposed development on the land and, if there is a certificate, the statement is to include:
  (i) the period for which the certificate is current, and
  (ii) that a copy may be obtained from the head office of the Department of Planning, and

No such certificate applies to the land.

(b) a statement setting out any terms of a kind referred to in clause 18 (2) of that Policy that have been imposed as a condition of consent to a development application granted after 11 October 2007 in respect of the land.

No such terms apply to the land.

16. Site compatibility certificates for infrastructure

A statement of whether there is a valid site compatibility certificate (infrastructure), of which the council is aware in respect of proposed development on the land and, if there is a certificate, the statement is to include:

(a) the period for which the certificate is valid, and
(b) that a copy may be obtained from the head office of the Department of Planning.

No such certificate applies to the land.

17. Site compatibility certificates and conditions for affordable rental housing

(1) A statement to the whether there is a current site compatibility certificate (affordable rental housing), of which the council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:

(a) the period for which the certificate is current, and
(b) that a copy may be obtained from the head office of the Department of Planning.

No such certificate applies to the land.

(2) A statement setting out any terms of a kind referred to in clause 17(1) or 38(1) of *State Environmental Planning Policy (Affordable Rental Housing) 2009* that has been imposed as a condition of consent to a development application in respect of the land.

No such terms apply to the land.

18. Paper subdivision information

(1) The name of any development plan adopted by a relevant authority that applies to the land or that is proposed to be subject to a consent ballot.

(2) The date of any subdivision order that applies to the land.

(3) Words and expressions used in this clause have the same meaning as they have in Part 16C of this Regulation.

No such plan or order applies to the land

19. Site verification certificates

A statement of whether there is a current site verification certificate, of which the council is aware, in respect of the land and, if there is a certificate, the statement is to include:

(a) the matter certified by the certificate, and

Note: A site verification certificate sets out the Director-General's opinion as to whether the land concerned is or is not biophysical strategic agricultural land or critical industry cluster land—see Division 3 of Part 4AA of State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.

(b) the date on which the certificate ceases to be current (if any), and

(c) that a copy may be obtained from the head office of the Department of Planning and Infrastructure.

No such certificate applies to the land

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

(a) that the land to which the certificate relates is significantly contaminated land within the meaning of that Act—if the land (or part of the land) is significantly contaminated land at the date when the certificate is issued,
(b) that the land to which the certificate relates is subject to a management order within the meaning of that Act—if it is subject to such an order at the date when the certificate is issued,
(c) that the land to which the certificate relates is the subject of an approved voluntary management proposal within the meaning of that Act—if it is the subject of such an approved proposal at the date when the certificate is issued,
(d) that the land to which the certificate relates is subject to an ongoing maintenance order within the meaning of that Act—if it is subject to such an order at the date when the certificate is issued,
(e) that the land to which the certificate relates is the subject of a site audit statement within the meaning of that Act—if a copy of such a statement has been provided at any time to the local authority issuing the certificate.

Continuously updated information in relation to the above matters can also be found by searching the records of the Environmental Protection Authority (EPA) at the website of the EPA. The search page can be found at: http://www.epa.nsw.gov.au/prclmapp/searchregister.aspx.

The following information is available to Council but may not be current:

Council has adopted by resolution a policy (commencing 1 August 2000), on contaminated land which may restrict the development of land. This policy is implemented when zoning or land use changes are proposed on lands which have previously been used for certain purposes. Consideration of Council's adopted policy and the application of provisions under the State Legislation is warranted.

The land is not within an investigation area or remediation site under Part 3 of the Contaminated Land Management Act 1997.

The land is not subject to an investigation order or a remediation order within the meaning of the Contaminated Land Management Act 1997.

The land is not subject to a voluntary investigation proposal (or voluntary remediation proposal) that is the subject of the Environment Protection Authority's agreement under Section 19 or 26 of the Contaminated Land Management Act 1997.

The land is not subject of a site audit statement within the meaning of the Contaminated Land Management Act 1997.

Note 2: Any advice received by Council pursuant to section 26(2) of the Nation Building and Jobs Plan (State Infrastructure Delivery) Act 2009, is included below.

No such certificate applies to the land.

The following additional information is provided under Section 149(5) of the Environmental Planning and Assessment Act 1979

Note:

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

Council is in receipt of information by the NSW National Parks and Wildlife Service indicating the land either contains or is in close proximity to an area possibly containing remnant vegetation associated with a Cumberland Plains Endangered Ecological Community that is listed under the Threatened Species Conservation Act. On request Council will supply such information available from its records; however, interested parties must take and rely on their own advice and enquiries.

Information from NSW National Parks and Wildlife Service indicates that the land either contains or is in close proximity to an area possibly containing remnant vegetation associated with a Cumberland Plain Endangered Ecological Community. NPWS have identified the community as Cumberland Plain Woodland (Shale Hills Woodland, Shale Plains Woodland) that is listed as endangered under Pt. 3 Sch. 1 of the NSW Threatened Species Conservation Act 1995 and the Commonwealth Environmental Protection and Biodiversity Conservation Act 1999.

NPWS mapping indicates that the remnant vegetation is part of an area that is greater than 0.5 hectares with tree cover with agriculture but no major urban or suburban development.

The attached Flood Information Sheet provides flood levels where they are available together with other relevant flooding information.

The land is subject to the provisions of Clause 5.9 - Preservation of trees or vegetation, under Fairfield Local Environmental Plan 2013.

Land must not be cleared or filled except with the consent of Council.

The applicant's attention is drawn to the Department of Infrastructure, Planning and Natural Resources map at the 1:100,000 scale 'Salinity Potential in Western Sydney 2002' that indicates there is potential for salinity in the Region. The map can be viewed at Council's Customer Service Centre (86 Avoca Road Wakeley).

Council's policy 'Building in Saline Environments', applies to all areas of Fairfield City and requires use of construction measures and materials in new development to minimise risk of salt damage to buildings from urban salinity.

On 15th April 2014, the Australian Government announced that it intends to proceed with an airport at Badgerys Creek in the Liverpool City Council area. The original Environmental Impact Statement prepared for the airport site in the late 1990's included options and aircraft flight paths that impact on various parts of Fairfield City. At this stage, Council does not have any up-to-date information regarding the Badgerys Creek Airport. You should make your own enquiries with the Commonwealth Government Department responsible via the website http://www.infrastructure.gov.au/aviation.

Clause 2.7 of Fairfield Local Environmental Plan 2013 requires development consent for the demolition of a building or work.

FAIRFIELD CITY COUNCIL
DEVELOPMENT CONTROL PLANS – 5 August 2015

Fairfield City Wide DCP

Title	Adopted by Council*	Effective Date
Fairfield CityWide Development Control Plan 2013	13 November 2012	31 May 2013
Amendment No.1 change maximum height permissible for detached secondary dwellings, clarify requirements and correct various anomalies, incorporate outdoor dining policy into a number of site specific DCPs (see table below)	11 February 2014	5 March 2014
Amendment No.2 amend chapter 2 to reference Site Specific DCP – Wetherill Park Market Town	20 March 2013	7 March 2014
Amendment No.3 Introduce Chapter 4B - Secondary Dwellings in Rural Area - Horsley Park and Cecil Park	11 December 2013	14 March 2014
Amendment No. 4 amends Chapter 9 Industrial Development Site Specific Controls for 449 Victoria Street and 96 Newton Road, Wetherill Park	24 September 2013	21 March 2014
Amendment No.5 amends Chapters 2 and 10 and Appendix B to ensure provisions within the DCP are in line with the SEPP (Exempt and Complying Development Codes) 2008.	13 May 2014	28 May 2014
Amendment No. 5A amends Chapter 6A – Multi Dwelling Housing – Town house and Villas: Site Specific DCP – 46 & 50 Cobbett Street, Wetherill Park.	12 March 2013	22 August 2014
Amendment No. 6 including increase to building heights for detached granny flats, removal of reference to minimum lot sizes for R1 zoned lands, inclusion of new controls and provisions relating to neighbourhood shops and pad mounted sub stations, clarify requirements and correct a number of anomalies associated with secondary dwellings, dual occupancy, narrow lots and residential flat buildings and other minor inconsequential amendments.	12 August 2014	3 September 2014
Amendment No. 6A amends Chapter 14 Subdivision – Applying to land located on 630 Elizabeth Drive and 9-10 Schubert Place, Bonnyrigg Heights to facilitate a future road link between Stivala Place and Schubert Place.	12 August 2014	3 September 2014
Amendment No.7 proposed amendments include – Additional Controls for Child Care Centres, Boarding Houses and Granny Flats; Revised Heritage Chapter; New provisions relating to CCTV for specific land uses, and; Acoustic measures for development in the Rural Area.	25 November 2014	3 December 2014
Amendment No. 7A amends Chapter 10 Miscellaneous Development - applying to land located on 1 Bartley Street, Cabramatta to facilitate the development of a hotel or motel accommodation at the Cabravale Diggers site.	26 August 2014	16 January 2015
Amendment 8 amends Chapter 9 – Industrial Development. This amendment includes provisions for industrial/employment development proposals in close proximity to residential land. The amended controls cover the following issues: General Design Requirements (including setback considerations, driveways, loading and storage areas, etc); Bulk and scale; Vehicular and Pedestrian Access Privacy; Light Spill; Noise and Vibration; and Landscaping.	10 March 2015	1 April 2015
Amendment 9 includes new provisions relating to various forms of residential development including: Building Appearance, Landscaping, Private Open space, Minimum Lot Width, Car Parking Rates and Notification of S82A Applications.	12 May 2015	27 May 2015
Amendment 10 including amendments to: • the intent of the Development Control Plan and Development Application process – the DA Guide • provisions for rural zone development • residential flat building setbacks • heritage advice • road classifications	14 July 2015	5 August 2015

Place Based and Site Specific DCPs

Title	Adopted by Council*	Effective Date
Bonnyrigg Town Centre DCP.28(2010) - Amendment No.1 (Awning controls and amendment to area subject to Bonnyrigg Town centre DCP – 3.11.2010) - Amendment No.2 (Outdoor Dining Controls –5.3.2014)		28 May 2004
Cabramatta Town Centre DCP (5/2000) - Amendment No.1 (Outdoor Dining Controls –5.3.2014) - Amendment No. 2 (New clause regarding Model Submission – 3.09.2014)	13 November 2012	31 May 2013
Fairfield City Centre DCP 2013 - Amendment No.1 (Outdoor Dining Controls – 5.3. 2014) - Amendment No. 2 (Remove reference to PublicArt Guide and update signage controls reference – 3.09.2014)	13 November 2012	31 May 2013
Canley Corridor DCP No.37 (2013) (Canley Vale and Canley Heights town centres) - Amendment No.1: (Development Controls for Adams Reserve 12.9.2006) - Amendment No.2: (Development Controls for 45-47 Peel St, Canley Heights 9.4.2008) - Amendment No.3: (Awnings controls 3.11.2010) - Amendment No.4: (Development Controls for 190 Canley Vale Rd, Canley Heights 19.4.2011) - Amendment No.5: (References to Fairfield LEP 2013 31.5.2013) - Amendment No.6: (Outdoor Dining Controls –5.3.2014) - Amendment No. 7 (Remove reference to Public Art Guide – 3.09.2014) - Amendment No. 8 (Include 46 Derby Street, Canley Heights into Town Centre Catchment – 01.07.2015).	13 November 2012	31 May 2013
Fairfield Heights Local Centre DCP 2013	13 November 2012	31 May 2013
Prairiewood Town Centre – Southern Precinct DCP 2013	13 November 2012	31 May 2013
Site Specific DCP – Wetherill Park Market Town	20 March 2013	7 March 2014

Master Plans

Title	Adopted by Council*	Effective Date
Prairiewood Masterplan (December 2005)	13 November 2012	31 May 2013
Fairfield Town Centre Masterplans – The Crescent and Barbara Street Precincts (May 2007)		May 2007

Structure Plans

Title	Adopted by Council*	Effective Date
Villawood Town Centre		February 2008

* Note: Some *"In Force"* Development Control Plans may be under review, check with Council for date of last amendment.

Fairfield City Council
Administration Centre
86 Avoca Road
WAKELEY NSW 2176
PO Box 21
FAIRFIELD NSW 1860
Telephone: (02) 9725 0222
Facsimile: (02) 9609 3257

Flood Information Sheet

Applicant's Details:

Applicant's Name	**Sullivan Environmental Services Pty Ltd**
Postal Address	**PO Box 5248 TURRAMURRA NSW 2074**
Phone	
Fax	

Property Particulars:

House No.	**184 - 192**
Street & Suburb	**Restwell Road PRAIRIEWOOD**
Lot Description	**Lot: 7 Sec:E DP: 6934**

Council has adopted a policy on flooding which may restrict the development of land. The Fairfield City-Wide Development Control Plan 2013 (which includes provisions for flood management) applies to all of the Fairfield Local Government area.

Part or all of this land may be affected by local overland flooding.

LOCAL OVERLAND FLOODING

Description

Part or all of the land may be affected by local overland flooding. This parcel is **not** in an area covered by overland flood risk mapping completed by Council.

An overland flood notation may be placed on a property based on information from a number of sources. Typical sources include: information from residents, investigation of local drainage problems and hydraulic analysis of local catchments by engineering consultants and Council staff.

Local Overland Flood Details

A preliminary analysis of this catchment to quantify the amount of stormwater in the vicinity of this property **has not** been carried out.

Size of Flood	Flood Level (m AHD)	Flow (m^3/s)	Velocity (m/s)
Probable Maximum Flood (PMF)	Not Known	Not Known	Not Known
100 Year ARI	Not Known	Not Known	Not Known
50 Year ARI	Not Known	Not Known	Not Known
20 Year ARI	Not Known	Not Known	Not Known

2 October 2015

Glossary over page

GLOSSARY

m AHD	metres Australian Height Datum (AHD).
Australian Height Datum (AHD)	A common national plane of level approximately equivalent to the height above sea level. All flood levels, floor levels and ground levels are normally provided in metres AHD.
Average Recurrence Interval (ARI)	The long term average number of years between the occurrence of a flood as big as the selected event. For example, floods with a discharge as great as the 20 year ARI event will occur on average once every 20 years. ARI is another way of expressing the likelihood of occurrence of a flood event.
flood	A relatively high stream flow that overtops the natural or artificial banks in any part of a stream, river, estuary, lake or dam. It also includes local overland flooding associated with major drainage before entering a watercourse, or coastal inundation resulting from raised sea levels, or waves overtopping the coastline.
flood risk precinct	An area of land with similar flood risks and where similar development controls may be applied by a Council to manage the flood risk. The flood risk is determined based on the existing development in the precinct or assuming the precinct is developed with normal residential uses. Usually the floodplain is categorised into three flood risk precincts 'low', 'medium' and 'high', although other classifications can sometimes be used. **High Flood Risk:** This has been defined as the area of land below the 100-year flood event that is either subject to a high hydraulic hazard or where there are significant evacuation difficulties. **Medium Flood Risk:** This has been defined as land below the 100-year flood level that is not within a High Flood Risk Precinct. This is land that is not subject to a high hydraulic hazard or where there are no significant evacuation difficulties. **Low Flood Risk:** This has been defined as all land within the floodplain (i.e. within the extent of the probable maximum flood) but not identified within either a High Flood Risk or a Medium Flood Risk Precinct. The Low Flood Risk Precinct is that area above the 100-year flood event.
local overland flooding	The inundation of normally dry land by local runoff rather than overbank discharge from a stream, river, estuary, lake or dam.
mainstream flooding	The inundation of normally dry land occurring when water overflows the natural or artificial banks of a stream, river, estuary, lake or dam.
probable maximum flood (PMF)	The largest flood that could conceivably occur at a particular location.

G

Appendix G Land Title Records

Land and Property Information Division

ABN: 84 104 377 806
GPO BOX 15
Sydney NSW 2001
DX 17 SYDNEY Telephone: 1300 052 637

NSW GOVERNMENT Land & Property Information

A division of the Department of Finance & Services

TITLE SEARCH

Title Reference: 1/1175636

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 1/1175636

SEARCH DATE	TIME	EDITION NO	DATE
1/10/2015	10:13 AM	1	31/8/2015

LAND

LOT 1 IN DEPOSITED PLAN 1175636
AT PRAIRIEWOOD
LOCAL GOVERNMENT AREA FAIRFIELD
PARISH OF ST LUKE COUNTY OF CUMBERLAND
TITLE DIAGRAM DP1175636

FIRST SCHEDULE

CALABRIA COMMUNITY CLUB LIMITED

SECOND SCHEDULE (8 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 A446660 CONDITIONS
3 AG605095 MORTGAGE TO PANBIC PTY LTD
4 DP1175636 EASEMENT TO DRAIN WATER 2 METRE(S) WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
5 DP1175636 RESTRICTION(S) ON THE USE OF LAND
6 DP1175636 EASEMENT FOR WATER SUPPLY PURPOSES 3 METRE(S) WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
7 DP1175636 EASEMENT FOR UNDERGROUND CABLES 3 METRE(S) WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
8 DP1175636 RIGHT OF CARRIAGEWAY 3 METRE(S) WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

PRINTED ON 1/10/2015

** ANY ENTRIES PRECEDED BY AN ASTERISK DO NOT APPEAR ON THE CURRENT EDITION OF THE CERTIFICATE OF TITLE.*
WARNING: THE INFORMATION APPEARING UNDER NOTATIONS HAS NOT BEEN FORMALLY RECORDED IN THE REGISTER.

48801

CERTIFICATE OF TITLE.

(C.)

New South Wales.

[App^n No. 7081
[Reference to last Certificate
[Vol. 2136 Fol. 57.

REGISTER BOOK,
VOL. 2921 FOL. 250

CANCELLED
ON ISSUE OF NEW FOLIO 7/E/6934

GRYS

Edward Fletcher, of Smithfield Fruit Grower Transferee under Instrument of Transfer from N.S.W. Realty & Limited No A 446660 is now the proprietor of an Estate in fee simple subject nevertheless to the reservations and conditions, if any, contained in the Grant hereinafter referred to, and also subject to such encumbrances, liens, and interest as are notified hereon, in — That piece of land situated in the ~~in~~ Municipality of Smithfield and Fairfield, Parish of St. Luke, and County of Cumberland containing Five acres, or thereabouts, as shown on the Plan hereon, and therein edged red, being Lot 7 of Section E on a Plan deposited in the Land Titles Office, Sydney, No. 6934 and being part of 12300 acres delineated in the Public Map of the said Parish in the Department of Lands originally granted to Samuel Marsden John Palmer and John Harris by Crown Grant dated the Twenty seventh day of May one thousand eight hundred and twenty three

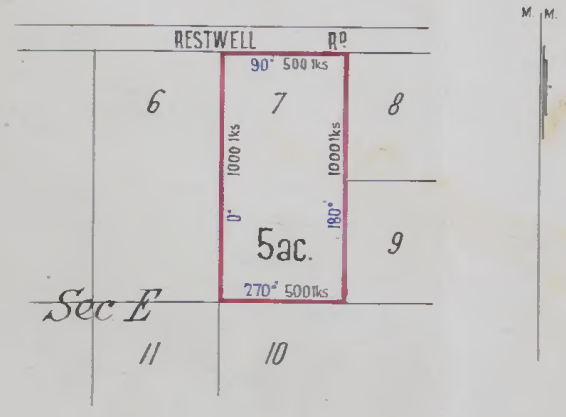
— In witness whereof, I have hereunto signed my name and affixed my Seal, this Twentieth day of March one thousand nine hundred and nineteen

Signed in the presence of A. McKay.

B. Williams

Registrar General.

REGISTRAR GENERAL NEW SOUTH WALES



Scale 6 Chains to an inch

NOTIFICATION REFERRED TO.

AA

The above mentioned Instrument of Transfer No A 446660 P contains the following conditions: The land above described when built on must be fenced and no advertisement hoarding shall be erected on the said land.

B. Williams
Registrar General.

REGISTRAR GENERAL NEW SOUTH WALES

No. A 519481 TRANSFER dated 5th December 1919 from the said Edward Fletcher to Charles Fredrick Reid of Fairfield Freeholder and Edithe Margaret Reid his wife as joint tenants of the land within described.
Produced and entered 10th December 1919 at 51 mins pt 3 o'clock in the after noon.

B. Williams
REGISTRAR GENERAL

REGISTRAR GENERAL NEW SOUTH WALES

RA1CECO

No. A 737459 Caveat dated 10th September 1921
Produced and entered 23rd September 1921
at 15 minutes past 1 o'clock in the
afternoon.
Registrar General

The above mentioned Caveat No A 737459 has lapsed.
Dated 14th January 1929
Vide B. 741376

Registrar General

No. B 741376. TRANSFER dated 27th October 1928
from the said Charles Frederick Reid and Edith
Margaret Reid to Edward Henry James Compton
of Bosley Park, Upholsterer.
of the land within described
Produced 5th November 1928 and entered 14th January 1929
at 2 o'clock in the After noon.
REGISTRAR GENERAL

No. C 515834 TRANSFER dated 20th February 1937
from the said Edward Henry James Compton to Anthony
Gauci (commonly known as Anthony Gauchi) of Bexley
Park, Carrier.
of the land within described
Produced 26th February 1937 and entered 10th March 1937
at 11 o'clock in the fore noon.
REGISTRAR GENERAL.

No. J 108811 Caveat produced 18th July, 1962
Entered 6th August, 1962
Withdrawn
T 510745.
28-4-1983.
Registrar General

REGISTERED PROPRIETOR Calabria Community Club
Limited. By Transfer T 510746 Registered
28-4-1983.
REGISTRAR GENERAL

COMPUTER FOLIO NO FURTHER
DEALINGS TO BE REGISTERED.

2921. 250

T510745 & 6 Ref

Land and Property Information Division

ABN: 84 104 377 806
GPO BOX 15
Sydney NSW 2001
DX 17 SYDNEY Telephone: 1300 052 637

NSW GOVERNMENT Land & Property Information

A division of the Department of Finance & Services

HISTORY OF TITLE TRANSACTION

Title Reference: 1/1175636

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
6/10/2015 4:24PM

FOLIO: 1/1175636

First Title(s): OLD SYSTEM
Prior Title(s): 7/E/6934

Recorded	Number	Type of Instrument	C.T. Issue
31/8/2015	DP1175636	DEPOSITED PLAN	FOLIO CREATED EDITION 1

*** END OF SEARCH ***

PRINTED ON 6/10/2015

Land and Property Information Division

ABN: 84 104 377 806
GPO BOX 15
Sydney NSW 2001
DX 17 SYDNEY Telephone: 1300 052 637

NSW GOVERNMENT Land & Property Information

A division of the Department of Finance & Services

HISTORY OF TITLE TRANSACTION

Title Reference: 7/E/6934

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
6/10/2015 4:52PM

FOLIO: 7/E/6934

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 2921 FOL 250

Recorded	Number	Type of Instrument	C.T. Issue
16/9/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
31/10/1990		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
31/1/1992	E227726	APPLICATION FOR REPLACEMENT CERTIFICATE OF TITLE	EDITION 1
8/12/1992	E960541	MORTGAGE	EDITION 2
9/10/2002	9018397	DISCHARGE OF MORTGAGE	
9/10/2002	9018398	MORTGAGE	EDITION 3
12/8/2004	AA872729	NOTICE OF DEATH	
12/8/2004	AA872767	TRANSFER OF MORTGAGE	EDITION 4
21/12/2006	AC828657	DISCHARGE OF MORTGAGE	
21/12/2006	AC828658	MORTGAGE	EDITION 5
12/2/2008	AD760074	MORTGAGE	EDITION 6
24/11/2009	AF139938	VARIATION OF MORTGAGE	
24/11/2009	AF139939	VARIATION OF MORTGAGE	EDITION 7
5/8/2011	AG415340	CAVEAT	
3/11/2011	AG597133	WITHDRAWAL OF CAVEAT	
8/11/2011	AG605094	DISCHARGE OF MORTGAGE	
8/11/2011	AG605095	MORTGAGE	EDITION 8
31/8/2015	DP1175636	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

PRINTED ON 6/10/2015

ⓍRIGHT OF CARRIAGE WAY 3 WIDE
ⓎEASEMENT FOR WATER SUPPLY PURPOSES 3 WIDE
ⓏEASEMENT FOR UNDERGROUND CABLES 3 WIDE

DIAGRAM 1 (N.T.S.)

DIAGRAM 2 (N.T.S.)

M.G.A.N.

SSM 40451 FD.
278° 06' 26" 965.81 SURVEY
278° 06' 24" 965.84 CALC. (GROUND)

RESTWELL ROAD (VARIABLE WIDTH)

GUTHEGA PLACE

R.M. D.H. & W IN KB. FD. (DP 259939) 159° 06' 50" 12.67

R.M. D.H. & W IN KB. FD. (DP 701421) 188° 26' 20" 11.045

R.M. D.H. & W IN KB. FD. (DP 701421) 188° 26' 30" 10.965

(0.185 END BK. VIDE DP 806884)

R.M. G.I.P. GONE
R.M. D.H. & W. IN PATH
157° 40' 30" 22.65

R.M. D.H. & W IN KB. FD. (DP 840403) 222° 10' 4.67 BY ME

276° 00' 54" 243.12

PM 58472 FD.
RM PM – COR.
(DP 840403)
255° 34' 26.64

A

R.M. D.H. & W GONE

VIDE DP 806884

1 1.403 ha

VIDE DIAGRAM 1

VIDE DIAGRAM 2

2 DP 840403

WIRE MESH FENCE

EASEMENT TO DRAIN WATER 12 WIDE

2 6198 m² PUBLIC RESERVE

WIRE MESH FENCE

ROAD

R.M. D.H. & W GONE

R.M. D.H. & W IN KB. FD. (DP 806884) 286° 09' 18.02

R.M. D.H. & W IN KB. FD. (DP 806884) 273° 14' 20.46

VALE PRAIRIE

219° 10' 05" 312.76
217° 17' 24" 474.68 SURVEY
217° 17' 24" 474.685 CALC. (GROUND)

(17.075)
320° 58' 14.74
278°
111.605
27'

R.M. G.I.P. FD. (DP 708678) 8° 27' 15" 0.365

B

PM 45339 FD.
RM PM – COR.
(DP 806884)
287° 21' 20" 20.705

RICKARD ROAD

SHORT LINE TABLE

LINE	BEARING	DISTANCE
1	11° 29' 40"	13.93
2	44° 17' 40"	11.79
3	81° 35'40"	12.395
4	171° 10' 20"	13.5
5	210° 11' 30"	12.975
6	93° 29' 05"	30.865
7	150° 39' 30"	10.41

SURVEYING AND SPATIAL INFORMATION REGULATION 2012: CLAUSE 12

MARK	M.G.A. CO-ORDINATES EASTING	NORTHING	ZONE	CSF	CLASS	ORDER
SSM 40451	304 902 · 161	6 251 402 · 919	56	1·000063	B	2
PM 45339	305 570 · 742	6 250 889 · 045	56	1·000061	B	2
PM 58472	305 858 · 348	6 251 266 · 719	56	1·000060	B	2

SOURCE: M.G.A. CO-ORDINATES ADOPTED FROM N.S.W. SCIMS AT 2 DECEMBER 2012

Surveyor: JAMES ARTHUR DONALD PELOSA
Date of Survey: COMPLETED ON 7.12.12
Surveyor's Ref: 743

PLAN OF SUBDIVISION OF LOT 7 SEC. E IN DP 6934

LGA: FAIRFIELD
Locality: PRAIRIEWOOD
Subdivision No: 9191
Lengths are in metres. Reduction Ratio 1: 2000

Registered 31.8.2015

DP1175636

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

PLAN FORM 6 (2012) WARNING: Creasing or folding will lead to rejection ePlan

DEPOSITED PLAN ADMINISTRATION SHEET

Sheet 1 of 2 sheet(s)

Office Use Only

Registered: 31.8.2015

Title System: TORRENS

Purpose: SUBDIVISION

Office Use Only

DP1175636

PLAN OF SUBDIVISION OF LOT 7 SEC. E IN DP 6934

LGA: FAIRFIELD

Locality: PRAIRIEWOOD

Parish: ST. LUKE

County: CUMBERLAND

Crown Lands NSW/Western Lands Office Approval

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

Signature: .....

Date: .....

File Number: .....

Office: .....

Subdivision Certificate

I, NICOLETTA DIACOPOULOS

Authorised Person/~~General Manager/*Accredited Certifier~~, certify that the provisions of s.109J of the *Environmental Planning and Assessment Act 1979* have been satisfied in relation to the proposed subdivision, new road or reserve ~~set out~~ herein.

Signature: .....

Accreditation number: .....

Consent Authority: FAIRFIELD CITY COUNCIL

Date of endorsement: 10 FEBRUARY 2015

Subdivision Certificate number: 9191

File number: DA 983.1/2011

*Strike through if inapplicable.

Survey Certificate

I, JAMES ARTHUR DONALD PELOSA .....

of PO BOX 21 FAIRFIELD 1860 .....

a surveyor registered under the *Surveying and Spatial Information Act 2002*, certify that:

*(a) The land shown in the plan was surveyed in accordance with the *Surveying and Spatial Information Regulation 2012*, is accurate and the survey was completed on 7.12.12

*(b) ~~The part of the land shown in the plan (*being/*excluding ^ .....) was surveyed in accordance with the *Surveying and Spatial Information Regulation 2012*, is accurate and the survey was completed on, ... the part not surveyed was compiled in accordance with that Regulation.~~

*(c) ~~The land shown in this plan was compiled in accordance with the *Surveying and Spatial Information Regulation 2012*.~~

Signature: Jim Pelosa Dated: 7.12.12

Surveyor ID: 1829

Datum Line: 'A' - 'B' .....

Type: *Urban/*~~Rural~~

The terrain is *Level-Undulating / *~~Steep-Mountainous~~.

*Strike through if inapplicable.

^Specify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey.

Statements of intention to dedicate public roads, public reserves and drainage reserves.

IT IS INTENDED TO DEDICATE LOT 2 AS PUBLIC RESERVE.

Plans used in the preparation of survey/compilation.

DP's:

6934, 259939, 701421, 708678, 806884, 840403, 871511

If space is insufficient continue on PLAN FORM 6A

Signatures, Seals and Section 88B Statements should appear on PLAN FORM 6A

Surveyor's Reference: 743

PLAN FORM 6A (2012) WARNING: Creasing or folding will lead to rejection

DEPOSITED PLAN ADMINISTRATION SHEET

Sheet 2 of 2 sheet(s)

Office Use Only

Registered: 31.8.2015

Office Use Only

DP1175636

PLAN OF SUBDIVISION OF LOT 7 SEC. E IN DP 6934

Subdivision Certificate number: 9191

Date of Endorsement: 10 FEBRUARY 2015

This sheet is for the provision of the following information as required:

- A schedule of lots and addresses - See 60(c) *SSI Regulation 2012*
- Statements of intention to create and release affecting interests in accordance with section 88B *Conveyancing Act 1919*
- Signatures and seals- see 195D *Conveyancing Act 1919*
- Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.

Lot	Street number	Street name	Street type	Locality
1	184-190	RESTWELL	ROAD	PRAIRIEWOOD
2	192	RESTWELL	ROAD	PRAIRIEWOOD

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

1. EASEMENT TO DRAIN WATER 2 WIDE
2. RESTRICTION ON USE OF LAND
3. EASEMENT FOR WATER SUPPLY PURPOSES 3 WIDE
4. EASEMENT FOR UNDERGROUND CABLES 3 WIDE
5. RIGHT OF CARRIAGE WAY 3 WIDE

Executed by the Calabria Community Club Limited (ACN 002 228 604) by

Director

Giuseppe Ciglio

Print Name

Director

Rocco LEONELLA

Print Name

Executed by Panbic Pty Ltd (ACN 034 162 295) pursuant to s.127 of the Corporations Act 2001

HUYMINH TRAN Sole DIRECTOR,

If space is insufficient use additional annexure sheet

Surveyor's Reference: 743

ePlan

Instrument setting out terms of Easements or Profits a Prendre intended to be created or released and of Restrictions on the Use of land or Positive Covenants intended to be created pursuant to Section 88B Conveyancing Act 1919.

Lengths are in metres

DP1175636

Plan of Subdivision of Lot 7 Section E on Deposited Plan 6934 covered by Subdivision Certificate No. 9191 dated 10 February 2015

Full name and address of the owner of the land:

Calabria Community Club Limited
184-192 Restwell Road,
PRAIRIEWOOD NSW 2176

Part 1

Number of item shown in the intention panel on the plan	Identify of easement, profit a prendre, restriction or positive covenant to be created and referred to in the plan	Burdened lot(s) or parcel(s)	Benefited lot(s), road(s), bodies or Prescribed Authorities
1	Easement to Drain Water 2 wide	1	100 in DP 806884
2	Restriction on Use of Land	1	Fairfield City Council
3	Easement for Water Supply Purposes 3 wide	1	Sydney Water Corporation
4	Easement for Underground Cables 3 wide	1	Endeavour Energy
5	Right of Carriage Way 3 wide	1	Fairfield City Council

Approved by Fairfield City Council

.....Authorised Officer

ePlan

DP1175636

Plan of Subdivision of Lot 7 Section E on Deposited Plan 6934 covered by Subdivision Certificate No. 9191 dated 10 February 2015

Part 2

1. **Terms of Easement to Drain Water 2 wide firstly referred to in the above mentioned plan**

   Easement to drain water 2 wide. PROVIDED THAT such easement shall ipso facto cease to affect or burden the servient tenement immediately upon the termination of the four weekly periodic lease in respect to the land being Lot 100 Deposited Plan 806884, created by clause 9 of the Lease registered number E255296, between the Council of the City of Fairfield as Lessor and Calabria Community Club Limited as Lessee in respect to the said Lot 100 Deposited Plan 806884.

2. **Terms of Restriction On Use of Land secondly referred to in the above mentioned plan**

   The designated floor level for habitable development of the lot hereby burdened shall be at least 0.5 metres above the 100 year flood level.

3. **Terms of Easement for Water Supply Purposes 3 wide thirdly referred to in the above mentioned plan**

   The terms set out in Sydney Water Corporation Memorandum AE292281C are incorporated in this document

4. **Terms of Easement for Underground Cables 3 wide fourthly referred to in the above mentioned plan**

   The terms set out in Memorandum No. 9262885 registered at Land and Property Information NSW, are incorporated in this document, subject to changing integral Energy Australia to Endeavour Energy in Clause 5.1

Approved by Fairfield City Council

.....Authorised Officer

ePlan

(Sheet 3 of 4 Sheets)

DP1175636

Plan of Subdivision of Lot 7 Section E on Deposited Plan 6934 covered by Subdivision Certificate
No. 9191 dated 10 February 2015

Name of Authority having the power to release vary or modify the Easement to Drain Water 2 wide, Restriction On Use of Land and Right of Carriage Way 3 wide firstly, secondly and fifthly referred to is:

The Council of the City of Fairfield without the consent of any other person or persons provided that any such release, variation of modification shall, if approved, be made and done in all respects at the cost and expense of the person or persons requesting such release, variation or modification.

Signed on behalf of Endeavour Energy
ABN 59 253 130 878 by its Attorney
Pursuant to Power of Attorney Book 4677
No 686 in the presence of:

.....
Signature of witness

.....
Signature of attorney

IAN STEWART COUSIN
Name of witness
c/- Endeavour Energy
51 Huntingwood Drive
Huntingwood NSW 2148

Name: Helen Smith
Position: Manager Property & Fleet
Date of execution: 12 January 2015.
Reference: NRS2621

Approved by Fairfield City Council

.....Authorised Officer

ePlan

(Sheet 4 of 4 Sheets)

DP1175636

Plan of Subdivision of Lot 7 Section E on Deposited Plan 6934 covered by Subdivision Certificate No. 9191 dated 10 February 2015

Executed by the Calabria Community Club Limited (ACN 002 228 604) by

Director

Secretary

Rocco LEONELLO

Name (BLOCK LETTERS)

Name (BLOCK LETTERS)

Director

ROCCO LEONELLO

Director

GIUSEPPE GIGLIO

Inspected and Identified on behalf of Fairfield City Council

Nicoletta Diacopoulos
Co-ordinator Engineering Assessment
Delegate of Fairfield City Council

Executed by Panbic Pty Ltd CACN 034 162 245 pursuant to s 127 of the Corporations Act 2001

Director

Full name: HUY MINH TRAN

Secretary/Director

Full Name:

Approved by Fairfield City Council

Authorised Officer

REGISTERED 31.8.2015

STAMP DUTY [redacted]

REGISTRAR GENERAL NEW SOUTH WALES APR 1983 15 09

T 510746

NEW SI
1:020100
STAMP DUTY

TRANSFER

REAL PROPERTY ACT, 1900

(See Instructions for Completion on back of form

T

2 2 of 2 X

$ 30

Torrens Title Reference	If Part Only, Delete Whole and Give Details	Location
DESCRIPTION OF LAND Note (a) VOL. 2921 FOL. 250	WHOLE	BOSSLEY PARK PARISH ST. LUKE COUNTY CUMBERLAND

TRANSFEROR Note (b)

ANTHONY GAUCI (commonly known as Anthony Gauchi) of Bossley Park, Carrier

ESTATE Note (c)

(the abovenamed TRANSFEROR) hereby acknowledges receipt of the consideration of $200,000.00 and transfers an estate in fee simple in the land above described to the TRANSFEREE

TRANSFEREE Note (d)

CALABRIA COMMUNITY CLUB LIMITED a company duly incorporated in New South Wales and having its registered office at 45A Oxford Road, Ingleburn.

OFFICE USE ONLY

5.

TENANCY Note (e)

as joint tenants/tenants in common

PRIOR ENCUMBRANCES Note (f)

subject to the following PRIOR ENCUMBRANCES 1. ..... 2. ..... 3. .....

DATE 8th April, 1983.

We hereby certify this dealing to be correct for the purposes of the Real Property Act, 1900.

EXECUTION Note (g)

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

Signature of Witness

Ian Isaac Leopold Lacey
Name of Witness (BLOCK LETTERS)

38 Spencer Street Fairfield
Address and occupation of Witness

Solicitor

a Gauci
Signature of Transferor

Note (g)

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

Signature of Witness

Name of Witness (BLOCK LETTERS)

Address and occupation of Witness

J.A. BUDA
Solicitor Signature of Transferee

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

LODGED BY Buda, Romano & Assoc.

Delivery Box Number 154 U.

LOCATION OF DOCUMENTS

CT / OTHER

Herewith.

In R.G.O. with .....

Produced by .....

OFFICE USE ONLY

Checked	Passed	REGISTERED 29-4-1983		Cert. of Title
Signed	Extra Fee	Registrar General		

RB 16 DW

INSTRUCTIONS FOR COMPLETION

This dealing should be marked by the Commissioner of Stamp Duties before lodgment by hand at the Registrar General's Office.

Typewriting and handwriting should be clear, legible and in permanent non-copying ink.

Alterations are not to be made by erasure; the words rejected are to be ruled through and initialled by the parties to the dealing.

If the space provided is insufficient, additional sheets of the same size and quality of paper and having the same margins as this form should be used. Each additional sheet must be identified as an annexure and signed by the parties and the attesting witnesses.

If it is intended to create easements, covenants, &c., use forms RP13A, RP13B, RP13C as appropriate.

Rule up all blanks.

The following instructions relate to the SIDE NOTES on the form.

(a) Description of land:

(i) TORRENS TITLE REFERENCE.—For a manual reference insert the Volume and Folio (e.g., Vol. 8514 Fol. 126)—For a computer folio insert the folio identifier (e.g., 12/701924). Title references should be listed in numerical sequence.

(ii) PART/WHOLE.—If part only of the land in the folio of the Register is being transferred, delete the word "WHOLE" and insert the lot and plan number, portion, &c. See also sections 327 and 327AA of the Local Government Act, 1919.

(iii) LOCATION.—Insert the locality shown on the Certificate of Title/Crown Grant, e.g., at Chullora. If the locality is not shown, insert the Parish and County, e.g., Ph. Lismore Co. Rous.

(b) Show the full name of the transferor(s).

(c) If the estate being transferred is a lesser estate than an estate in fee simple, delete "fee simple" and insert appropriate estate.

(d) Show the full name, address and occupation or description of the transferee(s).

(e) Delete if only one transferee. If more than one transferee, delete either "joint tenants" or "tenants in common", and, if the transferees hold as tenants in common, state the shares in which they hold.

(f) In the memorandum of prior encumbrances, state only the registered number of any mortgage, lease, charge or writ to which this dealing is subject.

(g) Execution:

GENERALLY (i) Should there by insufficient space for execution of this dealing, use an annexure sheet.
(ii) The certificate of correctness under the Real Property Act, 1900, must be signed by all parties to the transfer, each party to execute the dealing in the presence of an adult witness, not being a party to the dealing, to whom he is personally known.
The solicitor for the transferee may sign the certificate on behalf of the transferee, the solicitor's name (not that of his firm), to be typewritten or printed adjacent to his signature.
Any person falsely or negligently certifying is liable to the penalties provided by section 117 of the Real Property Act, 1900.

ATTORNEY (iii) If the transfer is executed by an attorney for the transferor/transferee pursuant to a registered power of attorney, the form of attestation must set out the full name of the attorney, and the form of execution must indicate the source of his authority, e.g., "AB by his attorney (or receiver or delegate, as the case may be) XY pursuant to power of attorney registered Book No. , and I declare that I have no notice of the revocation of the said power of attorney".

AUTHORITY (iv) If the transfer is executed pursuant to an authority (other than specified in (iii)) the form of execution must indicate the statutory, judicial or other authority pursuant to which the transfer has been executed.

CORPORATION (v) If the transfer is executed by a corporation under seal, the form of execution should include a statement that the seal has been properly affixed, e.g., in accordance with the Articles of Association of the corporation. Each person attesting the affixing of the seal must state his position (e.g., director, secretary) in the corporation.

(h) Insert the name, postal address, Document Exchange reference, telephone number and delivery box number of the lodging party.

(i) The lodging party is to complete the LOCATION OF DOCUMENTS panel. Place a tick in the appropriate box to indicate the whereabouts of the Certificate of Title. List, in an abbreviated form, other documents lodged, e.g., stat. dec. for statutory declaration, pbte for probate, L/A. for letters of administration, &c.

OFFICE USE ONLY

FIRST SCHEDULE DIRECTIONS

(A) FOLIO IDENTIFIER	(B) DIRECTION	(C) NAME

SECOND SCHEDULE AND OTHER DIRECTIONS

(D) FOLIO IDENTIFIER	(E) DIRECTION	(F) NOTFN TYPE	(G) DEALING NUMBER	(H) DETAILS

H

Appendix H WorkCover Dangerous Goods Licence Search

NSW GOVERNMENT
WorkCover
Our Ref: D15/154244
Your Ref: Adam Sullivan

WorkCover NSW
92–100 Donnison Street, Gosford, NSW 2250
Locked Bag 2906, Lisarow, NSW 2252
T 02 4321 5000 F 02 4325 4145
Customer Service Centre 13 10 50
DX 731 Sydney workcover.nsw.gov.au

21 September 2015

Attention: Adam Sullivan
Sullivan Environmental Sciences Pty Ltd
PO BOX 5248
Turramurra NSW 2074

Dear Mr Sullivan,

RE SITE: 182-192 Restwell Rd Prairiewood NSW

I refer to your site search request received by WorkCover NSW on 16 September 2015 requesting information on licences to keep dangerous goods for the above site.

A search of the Stored Chemical Information Database (SCID) and the microfiche records held by WorkCover NSW has not located any records pertaining to the above mentioned premises.

If you have any further queries please contact the Dangerous Goods Licensing Team on (02) 4321 5500.

Yours Sincerely

Brent Jones
Senior Licensing Officer
Dangerous Goods Team

Appendix I Field Sheets and Calibration Records

ThermoFisher SCIENTIFIC

The world leader in serving science

RENTALS

Equipment Report - MiniRAE 3000 PID

This Gas Meter has been performance checked and calibrated as follows:

Lamp	Compound	Concentration	Zero	Span	Traceability Lot #	Pass?
10.6 eV	Isobutylene	100 ppm	0.0 ppm	100.0 ppm	Lot:1805792 Cyl:9	☑

Alarm Limits

High	100 ppm
Low	50 ppm

Bump Test

Date	Target Gas	Reading	Pass?
25/09/2015	100 ppm	100.0 ppm	☑

☑ Battery Status 100%
☑ 10 minutes test complete
☑ Spare battery status (Min 5.5 volts)
☐ Electrical Safety Tag attached (AS/NZS 3760)

Tag No: 000163

Valid to: 09/10/2015

☑ Performance check (pump, lamp, sensor)
☑ Data cleared
☐ Filters checked

Date: 25/09/2015

Signed: [signature]

Please check that the following items are received and that all items are cleaned and decontaminated before return. A minimum $30 cleaning / service / repair charge may be applied to any unclean or damaged items. Items not returned will be billed for at the full replacement cost.

Sent	Returned	Item
☑	☐	MiniRAE 2000 PID / Operational Check / Battery Status 100%
☑	☐	Lamp 10.6 eV, Compound Set to: ISOBUTYLENE C/factor: 1
☑	☐	Protective yellow rubber boot
☑	☐	Inlet probe (attached to PID)
☑	☐	Spare water trap filter(s) Qty 1
☑	☐	Charger 240V to 12V1250mA
☑	☐	Cradle and Travel Charger
☑	☐	Instruction Manual behind foam on the lid of case "
☑	☐	Quick Guide Sheet behind foam on the lid of case "
☑	☐	Spare Alkaline Battery Compartment with batteries
☑	☐	Inline Moisture trap Filter Guide Laminated
☒	☐	Calibration regulator & tubing (optional)
☒	☐	Data cable and Software CD (optional)
☑	☐	Carry Case
☑	☐	Check to confirm electrical safety (tag must be valid)

Date: 25/09/2015

Signed: [signature]

TFS Reference	CS003400	Return Date:	/ /
Customer Reference		Return Time:	
Equipment ID	PID3000-4	Condition on return:	
Equipment Serial No.	592411924		

ThermoFisher SCIENTIFIC

The world leader in serving science

RENTALS

Equipment Report – SOIL AUGER KIT

This soil auger kit has been cleaned and checked:

Date: 25/09/2015 Checked by: C MILEWKO

Signed:

Please check that the following items are received and that all items are cleaned and decontaminated before return. A minimum $20 cleaning / service / repair charge may be applied to any unclean or damaged items. Items not returned will be billed for at the full replacement cost.

Sent	Received	Returned	Item
☑	☐	☐	1 Regular Auger Head
☑	☐	☐	1 Clay Auger Head
☑	☐	☐	1 Sand Auger Head
☑	☐	☐	1 Tee Handle / Ratchet Handle
☑	☐	☐	Extension rods Qty: 4
☑	☐	☐	1 Finger Ring for disconnecting extensions
X	☐	☐	Canvas carry bag
X	☐	☐	Optional – straps for canvas carry bag
☑	☐	☐	METAL CARRY BOX
☐	☐	☐	
☐	☐	☐	

Processors Signature/ Initials MS

Quote Reference	CS0034 00	Condition on return
Customer Ref		
Equipment ID	AMS70SC	
Equipment serial no.		
Return Date	/ /	
Return Time		

J

Appendix J Laboratory Analytical Reports

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1532447**	Page	: 1 of 20
Client	: **SULLIVAN ENVIRONMENTAL SCIENCES**	Laboratory	: Environmental Division Sydney
Contact	: ADAM SULLIVAN	Contact	:
Address	: PO Box 5248 TURRAMURRA NSW 2074	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: adam@sullivan-es.com.au	E-mail	:
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: SES_424	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 29-Sep-2015 15:00
C-O-C number	: ----	Date Analysis Commenced	: 30-Sep-2015
Sampler	: ----	Issue Date	: 07-Oct-2015 12:04
Site	: ----		
		No. of samples received	: 25
Quote number	: ----	No. of samples analysed	: 20

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Inorganics Sydney Organics
Shaun Spooner	Asbestos Identifier	Newcastle - Asbestos
Shobhna Chandra	Metals Coordinator	Sydney Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.

- **EA200: As only one sample container was submitted for multiple tests, sub sampling was conducted on sample ES1532447 - 020 prior to Asbestos analysis. As this has the potential to understate detection, results should be scrutinised accordingly and NATA accreditation does not apply to analysis on this sample.**
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	TP1_0.5	QC1	TP2_1.4	TP3_0.4	TP4_1.0
			Client sampling date / time	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]
Compound	CAS Number	LOR	Unit	ES1532447-001	ES1532447-002	ES1532447-003	ES1532447-004	ES1532447-005
				Result	Result	Result	Result	Result
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1	%	10.8	12.3	16.8	11.0	13.0
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	----	No	No	----
Asbestos Type	1332-21-4	-	--	-	----	-	-	----
Sample weight (dry)	----	0.01	g	57.7	----	27.4	20.3	----
APPROVED IDENTIFIER:	----	-	--	G.MORGAN	----	G.MORGAN	G.MORGAN	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	9	8	9	11	22
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	17	14	24	20	22
Copper	7440-50-8	5	mg/kg	49	46	23	19	30
Lead	7439-92-1	5	mg/kg	69	82	25	19	44
Nickel	7440-02-0	2	mg/kg	13	13	10	8	13
Zinc	7440-66-6	5	mg/kg	110	124	48	43	86
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	----	----	----	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	----	----	----	<0.05
beta-BHC	319-85-7	0.05	mg/kg	----	----	----	----	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	----	----	----	----	<0.05
delta-BHC	319-86-8	0.05	mg/kg	----	----	----	----	<0.05
Heptachlor	76-44-8	0.05	mg/kg	----	----	----	----	<0.05
Aldrin	309-00-2	0.05	mg/kg	----	----	----	----	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	----	----	----	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	----	----	----	----	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	----	----	----	----	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	----	----	----	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	----	----	----	----	<0.05
Dieldrin	60-57-1	0.05	mg/kg	----	----	----	----	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	----	----	----	----	<0.05
Endrin	72-20-8	0.05	mg/kg	----	----	----	----	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	----	----	----	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	----	----	----	----	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP1_0.5	QC1	TP2_1.4	TP3_0.4	TP4_1.0
				Client sampling date / time	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]
Compound	CAS Number	LOR	Unit		ES1532447-001	ES1532447-002	ES1532447-003	ES1532447-004	ES1532447-005
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
4.4`-DDD	72-54-8	0.05	mg/kg		----	----	----	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	----	----	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	----	----	----	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		----	----	----	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		----	----	----	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		----	----	----	----	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		----	----	----	----	<0.05
^ Sum of DDD + DDE + DDT	----	0.05	mg/kg		----	----	----	----	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	----	----	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	----	----	----	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		----	----	----	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg		----	----	----	----	<0.05
Diazinon	333-41-5	0.05	mg/kg		----	----	----	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	----	----	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		----	----	----	----	<0.2
Malathion	121-75-5	0.05	mg/kg		----	----	----	----	<0.05
Fenthion	55-38-9	0.05	mg/kg		----	----	----	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	----	----	----	<0.05
Parathion	56-38-2	0.2	mg/kg		----	----	----	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	----	----	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	----	----	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	----	----	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		----	----	----	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		----	----	----	----	<0.05
Ethion	563-12-2	0.05	mg/kg		----	----	----	----	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		----	----	----	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		----	----	----	----	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP1_0.5	QC1	TP2_1.4	TP3_0.4	TP4_1.0
				Client sampling date / time	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]
Compound	CAS Number	LOR	Unit		ES1532447-001	ES1532447-002	ES1532447-003	ES1532447-004	ES1532447-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP1_0.5	QC1	TP2_1.4	TP3_0.4	TP4_1.0
				Client sampling date / time	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]
Compound	CAS Number	LOR	Unit		ES1532447-001	ES1532447-002	ES1532447-003	ES1532447-004	ES1532447-005
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	----	----	107
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	----	----	75.2
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		109	100	103	94.8	97.3
2-Chlorophenol-D4	93951-73-6	0.5	%		104	96.6	98.4	90.7	93.5
2.4.6-Tribromophenol	118-79-6	0.5	%		118	99.3	102	82.6	90.8
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		110	99.6	103	94.9	100.0
Anthracene-d10	1719-06-8	0.5	%		111	101	103	95.4	100
4-Terphenyl-d14	1718-51-0	0.5	%		112	102	104	96.8	101
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		109	114	114	110	108
Toluene-D8	2037-26-5	0.2	%		112	114	110	110	111
4-Bromofluorobenzene	460-00-4	0.2	%		114	119	117	111	111

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP5B_1.5	TP6B_0.4	TP7A_0.3	TP8_0.4	SB1_0.4
				Client sampling date / time	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]
Compound	CAS Number	LOR	Unit		ES1532447-007	ES1532447-008	ES1532447-009	ES1532447-010	ES1532447-011
					Result	Result	Result	Result	Result
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1	%		24.5	16.0	15.1	16.4	14.0
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		No	Yes	----	No	No
Asbestos Type	1332-21-4	-	--		-	Ch	----	-	-
Sample weight (dry)	----	0.01	g		50.0	57.4	----	40.9	42.9
APPROVED IDENTIFIER:	----	-	--		G.MORGAN	C.OWLER	----	C.OWLER	C.OWLER
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		12	19	10	10	17
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		17	27	19	26	36
Copper	7440-50-8	5	mg/kg		19	33	24	22	43
Lead	7439-92-1	5	mg/kg		63	32	37	36	35
Nickel	7440-02-0	2	mg/kg		6	18	13	14	14
Zinc	7440-66-6	5	mg/kg		106	76	105	62	94
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		----	----	<0.05	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		----	----	<0.05	----	----
beta-BHC	319-85-7	0.05	mg/kg		----	----	<0.05	----	----
gamma-BHC	58-89-9	0.05	mg/kg		----	----	<0.05	----	----
delta-BHC	319-86-8	0.05	mg/kg		----	----	<0.05	----	----
Heptachlor	76-44-8	0.05	mg/kg		----	----	<0.05	----	----
Aldrin	309-00-2	0.05	mg/kg		----	----	<0.05	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	----	<0.05	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg		----	----	<0.05	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		----	----	<0.05	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	----	<0.05	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		----	----	<0.05	----	----
Dieldrin	60-57-1	0.05	mg/kg		----	----	<0.05	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		----	----	<0.05	----	----
Endrin	72-20-8	0.05	mg/kg		----	----	<0.05	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	----	<0.05	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		----	----	<0.05	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP5B_1.5	TP6B_0.4	TP7A_0.3	TP8_0.4	SB1_0.4
				Client sampling date / time	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]
Compound	CAS Number	LOR	Unit		ES1532447-007	ES1532447-008	ES1532447-009	ES1532447-010	ES1532447-011
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
4.4`-DDD	72-54-8	0.05	mg/kg		----	----	<0.05	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	----	<0.05	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	----	<0.05	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		----	----	<0.2	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		----	----	<0.05	----	----
Methoxychlor	72-43-5	0.2	mg/kg		----	----	<0.2	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		----	----	<0.05	----	----
^ Sum of DDD + DDE + DDT	----	0.05	mg/kg		----	----	<0.05	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	----	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	----	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		----	----	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg		----	----	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg		----	----	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	----	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		----	----	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg		----	----	<0.05	----	----
Fenthion	55-38-9	0.05	mg/kg		----	----	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	----	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg		----	----	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	----	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	----	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	----	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	----	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg		----	----	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg		----	----	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg		----	----	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	----	<0.05	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP5B_1.5	TP6B_0.4	TP7A_0.3	TP8_0.4	SB1_0.4
				Client sampling date / time	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]
Compound	CAS Number	LOR	Unit		ES1532447-007	ES1532447-008	ES1532447-009	ES1532447-010	ES1532447-011
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP5B_1.5	TP6B_0.4	TP7A_0.3	TP8_0.4	SB1_0.4
				Client sampling date / time	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]
Compound	CAS Number	LOR	Unit		ES1532447-007	ES1532447-008	ES1532447-009	ES1532447-010	ES1532447-011
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	75.7	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	65.2	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		97.4	94.0	104	104	101
2-Chlorophenol-D4	93951-73-6	0.5	%		93.7	90.2	98.5	100.0	97.1
2.4.6-Tribromophenol	118-79-6	0.5	%		81.6	81.1	99.7	101	87.4
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		96.4	93.2	103	105	100
Anthracene-d10	1719-06-8	0.5	%		96.2	95.2	104	106	102
4-Terphenyl-d14	1718-51-0	0.5	%		99.6	95.9	106	108	103
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		107	107	114	111	110
Toluene-D8	2037-26-5	0.2	%		107	105	115	111	112
4-Bromofluorobenzene	460-00-4	0.2	%		110	107	114	111	116

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SB2_0.8	SB3_0.2	QC2	SB4_0.3	SB5_0.5
				Client sampling date / time	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]	[29-Sep-2015]	[29-Sep-2015]
Compound	CAS Number	LOR	Unit		ES1532447-014	ES1532447-015	ES1532447-016	ES1532447-017	ES1532447-018
					Result	Result	Result	Result	Result
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1	%		21.1	10.6	9.9	14.3	15.1
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		----	----	----	----	No
Asbestos Type	1332-21-4	-	--		----	----	----	----	-
Sample weight (dry)	----	0.01	g		----	----	----	----	50.0
APPROVED IDENTIFIER:	----	-	--		----	----	----	----	C.OWLER
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		9	13	9	12	11
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		24	38	47	29	18
Copper	7440-50-8	5	mg/kg		12	26	31	32	34
Lead	7439-92-1	5	mg/kg		16	36	29	39	24
Nickel	7440-02-0	2	mg/kg		6	20	40	16	14
Zinc	7440-66-6	5	mg/kg		18	56	63	86	67
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	<0.05	----	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SB2_0.8	SB3_0.2	QC2	SB4_0.3	SB5_0.5
				Client sampling date / time	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]	[29-Sep-2015]	[29-Sep-2015]
Compound	CAS Number	LOR	Unit		ES1532447-014	ES1532447-015	ES1532447-016	ES1532447-017	ES1532447-018
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	----	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	----	<0.2	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
^ Sum of DDD + DDE + DDT	----	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	----	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SB2_0.8	SB3_0.2	QC2	SB4_0.3	SB5_0.5
				Client sampling date / time	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]	[29-Sep-2015]	[29-Sep-2015]
Compound	CAS Number	LOR	Unit		ES1532447-014	ES1532447-015	ES1532447-016	ES1532447-017	ES1532447-018
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SB2_0.8	SB3_0.2	QC2	SB4_0.3	SB5_0.5
				Client sampling date / time	[28-Sep-2015]	[28-Sep-2015]	[28-Sep-2015]	[29-Sep-2015]	[29-Sep-2015]
Compound	CAS Number	LOR	Unit		ES1532447-014	ES1532447-015	ES1532447-016	ES1532447-017	ES1532447-018
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		87.5	94.2	----	85.6	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		70.8	77.9	----	64.6	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		110	95.0	92.8	99.5	104
2-Chlorophenol-D4	93951-73-6	0.5	%		105	92.1	89.5	95.0	99.6
2.4.6-Tribromophenol	118-79-6	0.5	%		96.7	85.6	78.5	87.9	87.2
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		107	97.5	94.5	99.4	104
Anthracene-d10	1719-06-8	0.5	%		109	97.1	96.4	102	103
4-Terphenyl-d14	1718-51-0	0.5	%		112	99.0	97.6	104	107
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		110	116	118	108	119
Toluene-D8	2037-26-5	0.2	%		107	117	115	109	108
4-Bromofluorobenzene	460-00-4	0.2	%		112	121	117	114	114

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SB6_1.2	SB7_1.0	SB8_0.8	SB9_0.3	SB10_0.9
				Client sampling date / time	[28-Sep-2015]	[29-Sep-2015]	[29-Sep-2015]	[29-Sep-2015]	[29-Sep-2015]
Compound	CAS Number	LOR	Unit		ES1532447-020	ES1532447-021	ES1532447-022	ES1532447-023	ES1532447-025
					Result	Result	Result	Result	Result
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1	%		18.7	17.5	12.8	13.4	16.2
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		No	No	No	----	No
Asbestos Type	1332-21-4	-	--		-	-	-	----	-
Sample weight (dry)	----	0.01	g		28.1	54.4	57.3	----	50.1
APPROVED IDENTIFIER:	----	-	--		S.SPOONER	S.SPOONER	S.SPOONER	----	S.SPOONER
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		9	7	11	6	18
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		18	20	24	14	10
Copper	7440-50-8	5	mg/kg		25	26	30	24	45
Lead	7439-92-1	5	mg/kg		12	31	106	26	15
Nickel	7440-02-0	2	mg/kg		11	12	23	11	4
Zinc	7440-66-6	5	mg/kg		43	42	304	67	26
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		----	----	----	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		----	----	----	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg		----	----	----	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg		----	----	----	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg		----	----	----	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg		----	----	----	<0.05	----
Aldrin	309-00-2	0.05	mg/kg		----	----	----	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	----	----	<0.05	----
^ Total Chlordane (sum)	----	0.05	mg/kg		----	----	----	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg		----	----	----	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	----	----	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg		----	----	----	<0.05	----
Dieldrin	60-57-1	0.05	mg/kg		----	----	----	<0.05	----
4.4`-DDE	72-55-9	0.05	mg/kg		----	----	----	<0.05	----
Endrin	72-20-8	0.05	mg/kg		----	----	----	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	----	----	<0.05	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		----	----	----	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SB6_1.2	SB7_1.0	SB8_0.8	SB9_0.3	SB10_0.9
				Client sampling date / time	[28-Sep-2015]	[29-Sep-2015]	[29-Sep-2015]	[29-Sep-2015]	[29-Sep-2015]
Compound	CAS Number	LOR	Unit		ES1532447-020	ES1532447-021	ES1532447-022	ES1532447-023	ES1532447-025
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
4.4`-DDD	72-54-8	0.05	mg/kg		----	----	----	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	----	----	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	----	----	<0.05	----
4.4`-DDT	50-29-3	0.2	mg/kg		----	----	----	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg		----	----	----	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg		----	----	----	<0.2	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		----	----	----	<0.05	----
^ Sum of DDD + DDE + DDT	----	0.05	mg/kg		----	----	----	<0.05	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	----	----	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	----	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg		----	----	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg		----	----	----	<0.05	----
Diazinon	333-41-5	0.05	mg/kg		----	----	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	----	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg		----	----	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg		----	----	----	<0.05	----
Fenthion	55-38-9	0.05	mg/kg		----	----	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	----	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg		----	----	----	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	----	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	----	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	----	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	----	----	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg		----	----	----	<0.05	----
Ethion	563-12-2	0.05	mg/kg		----	----	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg		----	----	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	----	----	<0.05	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SB6_1.2	SB7_1.0	SB8_0.8	SB9_0.3	SB10_0.9
				Client sampling date / time	[28-Sep-2015]	[29-Sep-2015]	[29-Sep-2015]	[29-Sep-2015]	[29-Sep-2015]
Compound	CAS Number	LOR	Unit		ES1532447-020	ES1532447-021	ES1532447-022	ES1532447-023	ES1532447-025
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SB6_1.2	SB7_1.0	SB8_0.8	SB9_0.3	SB10_0.9
				Client sampling date / time	[28-Sep-2015]	[29-Sep-2015]	[29-Sep-2015]	[29-Sep-2015]	[29-Sep-2015]
Compound	CAS Number	LOR	Unit		ES1532447-020	ES1532447-021	ES1532447-022	ES1532447-023	ES1532447-025
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	----	95.9	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	----	75.4	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		102	109	107	108	104
2-Chlorophenol-D4	93951-73-6	0.5	%		99.0	104	101	103	99.7
2.4.6-Tribromophenol	118-79-6	0.5	%		91.5	89.3	96.0	96.9	93.2
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		103	108	104	106	102
Anthracene-d10	1719-06-8	0.5	%		103	110	106	111	105
4-Terphenyl-d14	1718-51-0	0.5	%		107	114	107	113	107
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		109	110	112	112	114
Toluene-D8	2037-26-5	0.2	%		105	112	108	106	107
4-Bromofluorobenzene	460-00-4	0.2	%		109	116	110	111	109

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	TP1_0.5 - [28-Sep-2015]	Mid brown clay soil with grey rocks.
EA200: Description	TP2_1.4 - [28-Sep-2015]	Mid brown clay soil with grey rocks.
EA200: Description	TP3_0.4 - [28-Sep-2015]	Mid brown clay soil.
EA200: Description	TP5B_1.5 - [28-Sep-2015]	Mid brown clay soil with some vegetation.
EA200: Description	TP6B_0.4 - [28-Sep-2015]	Mid brown clay soil with red rocks and one friable asbestos fibre bundle approx 2 x 1 x 0.5 mm.
EA200: Description	TP8_0.4 - [28-Sep-2015]	Mid brown clay soil with red rocks.
EA200: Description	SB1_0.4 - [28-Sep-2015]	Mid brown clay soil with red rocks.
EA200: Description	SB5_0.5 - [29-Sep-2015]	Mid brown clay soil with red rocks.
EA200: Description	SB6_1.2 - [28-Sep-2015]	Mid orange - brown clay soil with grey rocks.
EA200: Description	SB7_1.0 - [29-Sep-2015]	Mid brown clay soil with grey rocks.
EA200: Description	SB8_0.8 - [29-Sep-2015]	Mid brown clay soil with grey rocks.
EA200: Description	SB10_0.9 - [29-Sep-2015]	Mid red - grey clay soil with grey rocks.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES1532447**	Page	: 1 of 12
Client	: **SULLIVAN ENVIRONMENTAL SCIENCES**	Laboratory	: Environmental Division Sydney
Contact	: ADAM SULLIVAN	Contact	:
Address	: PO Box 5248 TURRAMURRA NSW 2074	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: adam@sullivan-es.com.au	E-mail	:
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: SES_424	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 29-Sep-2015
C-O-C number	: ----	Date Analysis Commenced	: 30-Sep-2015
Sampler	: ----	Issue Date	: 07-Oct-2015
Site	: ----	No. of samples received	: 25
Quote number	: ----	No. of samples analysed	: 20

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Inorganics
		Sydney Organics
Shaun Spooner	Asbestos Identifier	Newcastle - Asbestos
Shobhna Chandra	Metals Coordinator	Sydney Inorganics

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA055: Moisture Content (QC Lot: 232242)									
ES1532288-003	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	21.6	20.6	5.13	0% - 20%
ES1532447-001	TP1_0.5	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	10.8	9.9	8.99	0% - 50%
EA055: Moisture Content (QC Lot: 232243)									
ES1532447-011	SB1_0.4	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	14.0	13.4	4.07	0% - 50%
ES1532569-001	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	15.0	14.4	4.40	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 229653)									
ES1532276-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	28	28	0.00	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	24	24	0.00	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	22	22	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	19	18	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	90	79	13.4	0% - 50%
ES1532447-010	TP8_0.4	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	26	23	14.0	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	14	12	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	10	9	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	22	26	12.4	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	36	59	48.3	0% - 50%
		EG005T: Zinc	7440-66-6	5	mg/kg	62	92	38.7	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 229655)									
ES1532447-023	SB9_0.3	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	14	15	9.71	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	11	12	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	6	7	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	24	25	4.38	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	26	24	9.79	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	67	66	2.61	0% - 50%
ES1532501-011	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	24	24	0.00	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	9	9	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	31	29	6.81	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	10	10	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 229654)									
ES1532276-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1532447-010	TP8_0.4	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 229656)									
ES1532447-023	SB9_0.3	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1532501-011	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 229186)									
ES1532447-005	TP4_1.0	EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 229186)									
ES1532447-005	TP4_1.0	EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 229186) - continued									
ES1532447-005	TP4_1.0	EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 229184)									
ES1532447-014	SB2_0.8	EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1532447-005	TP4_1.0	EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 229184) - continued									
ES1532447-005	TP4_1.0	EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 229185)									
ES1532447-014	SB2_0.8	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES1532447-005	TP4_1.0	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 229189)									
ES1532447-001	TP1_0.5	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES1532447-014	SB2_0.8	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 229185)									
ES1532447-014	SB2_0.8	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.00	No Limit
ES1532447-005	TP4_1.0	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 229189)									
ES1532447-001	TP1_0.5	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES1532447-014	SB2_0.8	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080: BTEXN (QC Lot: 229189)									
ES1532447-001	TP1_0.5	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES1532447-014	SB2_0.8	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080: BTEXN (QC Lot: 229189) - continued									
ES1532447-014	SB2_0.8	EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 229653)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	111	92	130
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	99.3	87	121
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	113	80	136
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	104	93	127
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	101	86	124
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	107	93	131
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	106	81	133
EG005T: Total Metals by ICP-AES (QCLot: 229655)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	103	92	130
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	101	87	121
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	115	80	136
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	114	93	127
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	103	86	124
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	108	93	131
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	108	81	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 229654)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	86.5	70	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 229656)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	78.0	70	105
EP068A: Organochlorine Pesticides (OC) (QCLot: 229186)								
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	89.1	76	120
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	85.8	69	117
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	83.3	67	127
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	82.2	68	118
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	87.8	71	113
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	85.2	69	119
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	87.4	69	119
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	85.7	76	120
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	86.9	67	121
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	85.3	65	113
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	85.6	66	118
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	101	60	124
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	80.4	67	123
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	94.9	57	115

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 229186) - continued								
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	106	65	123
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	84.3	71	115
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	82.2	68	116
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	86.6	68	116
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	90.2	66	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	85.0	65	129
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	86.0	68	120
EP068B: Organophosphorus Pesticides (OP) (QCLot: 229186)								
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	82.6	42	126
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	85.4	68	116
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	99.3	67	123
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	85.6	70	118
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	85.4	68	114
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	85.9	55	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	94.9	64	128
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	85.9	73	117
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	91.1	56	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	80.7	64	124
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	84.3	70	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	82.2	64	120
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	83.8	71	115
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	81.9	70	120
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	90.4	54	122
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	76.9	68	122
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	79.3	69	123
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	83.9	69	115
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	87.2	68	116
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 229184)								
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	93.1	79	123
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	95.1	77	123
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	101	79	123
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	98.8	73	121
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	95.6	76	122
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	103	70	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	76.5	72	114
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	99.3	77	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	101	81	123
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	82.5	72	113

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 229184) - continued								
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	97.4	79	123
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	96.5	77	123
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	78.9	71	113
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	100	80	124
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	100	79	123
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	98.0	79	125
EP080/071: Total Petroleum Hydrocarbons (QCLot: 229185)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	104	71	131
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	120	74	138
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	106	64	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 229189)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	99.2	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 229185)								
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	104	70	130
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	110	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	150 mg/kg	97.2	63	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 229189)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	97.5	68	128
EP080: BTEXN (QCLot: 229189)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	90.0	62	116
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	95.4	58	118
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	96.2	60	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	98.0	62	138
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	101	60	120
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	96.7	62	128

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005T: Total Metals by ICP-AES (QCLot: 229653)							
ES1532288-005	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	116	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	108	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	109	70	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 229653) - continued							
ES1532288-005	Anonymous	EG005T: Copper	7440-50-8	250 mg/kg	110	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	109	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	106	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	105	70	130
EG005T: Total Metals by ICP-AES (QCLot: 229655)							
ES1532447-023	SB9_0.3	EG005T: Arsenic	7440-38-2	50 mg/kg	113	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	105	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	108	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	110	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	107	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	106	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	105	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 229654)							
ES1532276-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	85.6	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 229656)							
ES1532447-023	SB9_0.3	EG035T: Mercury	7439-97-6	5 mg/kg	89.2	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 229186)							
ES1532447-005	TP4_1.0	EP068: 4.4`-DDT	50-29-3	2 mg/kg	96.9	70	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	86.6	70	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	93.4	70	130
		EP068: Endrin	72-20-8	2 mg/kg	90.4	70	130
		EP068: gamma-BHC	58-89-9	0.5 mg/kg	82.5	70	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	100	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 229186)							
ES1532447-005	TP4_1.0	EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	97.3	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	98.7	70	130
		EP068: Diazinon	333-41-5	0.5 mg/kg	97.8	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	95.6	70	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	92.2	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 229184)							
ES1532447-005	TP4_1.0	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	87.8	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	99.4	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 229185)							
ES1532447-005	TP4_1.0	EP071: C10 - C14 Fraction	----	523 mg/kg	99.4	73	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	103	53	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	122	52	132

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 229189)							
ES1532447-001	TP1_0.5	EP080: C6 - C9 Fraction	----	32.5 mg/kg	107	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 229185)							
ES1532447-005	TP4_1.0	EP071: >C10 - C16 Fraction	>C10_C16	860 mg/kg	92.5	73	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	117	53	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	111	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 229189)							
ES1532447-001	TP1_0.5	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	103	70	130
EP080: BTEXN (QCLot: 229189)							
ES1532447-001	TP1_0.5	EP080: Benzene	71-43-2	2.5 mg/kg	82.1	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	94.6	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	94.1	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	91.4	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	98.7	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	89.1	70	130

ALS Environmental

QA/QC Compliance Assessment for DQO Reporting

Work Order	: **ES1532447**	Page	: 1 of 6
Client	: **SULLIVAN ENVIRONMENTAL SCIENCES**	Laboratory	: Environmental Division Sydney
Contact	: ADAM SULLIVAN	Telephone	: +61-2-8784 8555
Project	: SES_424	Date Samples Received	: 29-Sep-2015
Site	: ----	Issue Date	: 07-Oct-2015
Sampler	: ----	No. of samples received	: 25
Order number	: ----	No. of samples analysed	: 20

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content							
Soil Glass Jar - Unpreserved (EA055-103)							
TP1_0.5, QC1, TP2_1.4, TP3_0.4, TP4_1.0, TP5B_1.5, TP6B_0.4, TP7A_0.3, TP8_0.4, SB1_0.4, SB2_0.8, SB3_0.2, QC2, SB6_1.2	**28-Sep-2015**	**----**	----	----	**02-Oct-2015**	12-Oct-2015	✓
Soil Glass Jar - Unpreserved (EA055-103)							
SB9_0.3	**29-Sep-2015**	**----**	----	----	**01-Oct-2015**	13-Oct-2015	✓
Soil Glass Jar - Unpreserved (EA055-103)							
SB4_0.3, SB5_0.5, SB7_1.0, SB8_0.8, SB10_0.9	**29-Sep-2015**	**----**	----	----	**02-Oct-2015**	13-Oct-2015	✓
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag - Separate bag received (EA200)							
TP1_0.5, TP2_1.4, TP3_0.4, TP5B_1.5, TP6B_0.4, TP8_0.4, SB1_0.4	**28-Sep-2015**	**----**	----	----	**06-Oct-2015**	26-Mar-2016	✓
Snap Lock Bag - Separate bag received (EA200)							
SB5_0.5, SB7_1.0, SB8_0.8, SB10_0.9	**29-Sep-2015**	**----**	----	----	**06-Oct-2015**	27-Mar-2016	✓
Snap Lock Bag - Subsampled by ALS (EA200)							
SB6_1.2	**28-Sep-2015**	**----**	----	----	**06-Oct-2015**	26-Mar-2016	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
TP1_0.5, QC1, TP2_1.4, TP3_0.4, TP4_1.0, TP5B_1.5, TP6B_0.4, TP7A_0.3, TP8_0.4, SB1_0.4, SB2_0.8, SB3_0.2, QC2, SB6_1.2	**28-Sep-2015**	**30-Sep-2015**	26-Mar-2016	✓	**01-Oct-2015**	26-Mar-2016	✓
Soil Glass Jar - Unpreserved (EG005T)							
SB4_0.3, SB5_0.5, SB7_1.0, SB8_0.8, SB9_0.3, SB10_0.9	**29-Sep-2015**	**30-Sep-2015**	27-Mar-2016	✓	**01-Oct-2015**	27-Mar-2016	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
TP1_0.5, QC1, TP2_1.4, TP3_0.4, TP4_1.0, TP5B_1.5, TP6B_0.4, TP7A_0.3, TP8_0.4, SB1_0.4, SB2_0.8, SB3_0.2, QC2, SB6_1.2	**28-Sep-2015**	**30-Sep-2015**	26-Oct-2015	✓	**06-Oct-2015**	26-Oct-2015	✓
Soil Glass Jar - Unpreserved (EG035T)							
SB8_0.8, SB9_0.3, SB10_0.9	**29-Sep-2015**	**30-Sep-2015**	27-Oct-2015	✓	**01-Oct-2015**	27-Oct-2015	✓
Soil Glass Jar - Unpreserved (EG035T)							
SB4_0.3, SB5_0.5, SB7_1.0	**29-Sep-2015**	**30-Sep-2015**	27-Oct-2015	✓	**06-Oct-2015**	27-Oct-2015	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068)							
TP4_1.0, TP7A_0.3, SB2_0.8, SB3_0.2	**28-Sep-2015**	**01-Oct-2015**	12-Oct-2015	✓	**01-Oct-2015**	10-Nov-2015	✓
Soil Glass Jar - Unpreserved (EP068)							
SB4_0.3, SB9_0.3	**29-Sep-2015**	**01-Oct-2015**	13-Oct-2015	✓	**01-Oct-2015**	10-Nov-2015	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP071)							
TP1_0.5, QC1, TP2_1.4, TP3_0.4, TP4_1.0, TP5B_1.5, TP6B_0.4, TP7A_0.3, TP8_0.4, SB1_0.4, SB2_0.8, SB3_0.2, QC2, SB6_1.2	**28-Sep-2015**	**01-Oct-2015**	12-Oct-2015	✓	**01-Oct-2015**	10-Nov-2015	✓
Soil Glass Jar - Unpreserved (EP071)							
SB4_0.3, SB5_0.5, SB7_1.0, SB8_0.8, SB9_0.3, SB10_0.9	**29-Sep-2015**	**01-Oct-2015**	13-Oct-2015	✓	**01-Oct-2015**	10-Nov-2015	✓
EP075(SIM)T: PAH Surrogates							
Soil Glass Jar - Unpreserved (EP075(SIM))							
TP1_0.5, QC1, TP2_1.4, TP3_0.4, TP4_1.0, TP5B_1.5, TP6B_0.4, TP7A_0.3, TP8_0.4, SB1_0.4, SB2_0.8, SB3_0.2, QC2, SB6_1.2	**28-Sep-2015**	**01-Oct-2015**	12-Oct-2015	✓	**01-Oct-2015**	10-Nov-2015	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
SB4_0.3, SB5_0.5, SB7_1.0, SB8_0.8, SB9_0.3, SB10_0.9	**29-Sep-2015**	**01-Oct-2015**	13-Oct-2015	✓	**01-Oct-2015**	10-Nov-2015	✓
EP080S: TPH(V)/BTEX Surrogates							
Soil Glass Jar - Unpreserved (EP080)							
TP1_0.5, QC1, TP2_1.4, TP3_0.4, TP4_1.0, TP5B_1.5, TP6B_0.4, TP7A_0.3, TP8_0.4, SB1_0.4, SB2_0.8, SB3_0.2, QC2, SB6_1.2	**28-Sep-2015**	**30-Sep-2015**	12-Oct-2015	✓	**02-Oct-2015**	12-Oct-2015	✓
Soil Glass Jar - Unpreserved (EP080)							
SB4_0.3, SB5_0.5, SB7_1.0, SB8_0.8, SB9_0.3, SB10_0.9	**29-Sep-2015**	**30-Sep-2015**	13-Oct-2015	✓	**02-Oct-2015**	13-Oct-2015	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	2	20	10.00	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	20	10.00	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	6	16.67	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	20	10.00	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH - Semivolatile Fraction	EP071	2	20	10.00	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	2	20	10.00	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	20	5.00	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	6	16.67	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH - Semivolatile Fraction	EP071	1	20	5.00	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	20	5.00	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	6	16.67	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH - Semivolatile Fraction	EP071	1	20	5.00	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	20	5.00	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	6	16.67	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH - Semivolatile Fraction	EP071	1	20	5.00	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	In-house. A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Asbestos Identification in Soils	EA200	SOIL	AS 4964 - 2004 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Pesticides by GCMS	EP068	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 504,505)
TRH - Semivolatile Fraction	EP071	SOIL	(USEPA SW 846 - 8015A) Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40.
PAH/Phenols (SIM)	EP075(SIM)	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	(USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve.

Preparation Methods	Method	Matrix	Method Descriptions
Methanolic Extraction of Soils for Purge and Trap	* ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES1532447**

Client	: **SULLIVAN ENVIRONMENTAL SCIENCES**	Laboratory	: Environmental Division Sydney
Contact	: ADAM SULLIVAN	Contact	:
Address	: PO Box 5248 TURRAMURRA NSW 2074	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: adam@sullivan-es.com.au	E-mail	:
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: SES_424	Page	: 1 of 3
Order number	: ----	Quote number	: ES2015SULENV0034 (SYBQ-207-15)
C-O-C number	: ----	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 29-Sep-2015 3:00 PM	Issue Date	: 29-Sep-2015
Client Requested Due Date	: 06-Oct-2015	Scheduled Reporting Date	: **06-Oct-2015**

Delivery Details

Mode of Delivery	: Undefined	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: ----
Receipt Detail	:	No. of samples received / analysed	: 25 / 20

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- **Asbestos analysis will be conducted by ALS Newcastle.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.
- **EA200: As only one sample container was submitted for multiple tests, SAMPLE #20, sub sampling was conducted prior to Asbestos analysis. As this has the potential to understate detection, results should be scrutinised accordingly.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

Method Client sample ID	Sample Container Received	Preferred Sample Container for Analysis
Asbestos Identification in Soils : EA200		
SB6_1.2	- Snap Lock Bag - Subsampled by ALS	- Snap Lock Bag - ACM/Asbestos Grab Sample bag

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EA200 Asbestos Identification in Soils -	SOIL - S-12 OC/OP Pesticides	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES1532447-001	[28-Sep-2015]	TP1_0.5		✓	✓		✓
ES1532447-002	[28-Sep-2015]	QC1		✓			✓
ES1532447-003	[28-Sep-2015]	TP2_1.4		✓	✓		✓
ES1532447-004	[28-Sep-2015]	TP3_0.4		✓	✓		✓
ES1532447-005	[28-Sep-2015]	TP4_1.0		✓		✓	✓
ES1532447-006	[28-Sep-2015]	TP5A_0.8	✓				
ES1532447-007	[28-Sep-2015]	TP5B_1.5		✓	✓		✓
ES1532447-008	[28-Sep-2015]	TP6B_0.4		✓	✓		✓
ES1532447-009	[28-Sep-2015]	TP7A_0.3		✓		✓	✓
ES1532447-010	[28-Sep-2015]	TP8_0.4		✓	✓		✓
ES1532447-011	[28-Sep-2015]	SB1_0.4		✓	✓		✓
ES1532447-012	[28-Sep-2015]	SB1_1.5	✓				
ES1532447-013	[28-Sep-2015]	SB2_0.3	✓				
ES1532447-014	[28-Sep-2015]	SB2_0.8		✓		✓	✓
ES1532447-015	[28-Sep-2015]	SB3_0.2		✓		✓	✓
ES1532447-016	[28-Sep-2015]	QC2		✓			✓
ES1532447-017	[29-Sep-2015]	SB4_0.3		✓		✓	✓
ES1532447-018	[29-Sep-2015]	SB5_0.5		✓	✓		✓
ES1532447-019	[28-Sep-2015]	SB6_0.5	✓				
ES1532447-020	[28-Sep-2015]	SB6_1.2		✓	✓		✓
ES1532447-021	[29-Sep-2015]	SB7_1.0		✓	✓		✓
ES1532447-022	[29-Sep-2015]	SB8_0.8		✓	✓		✓
ES1532447-023	[29-Sep-2015]	SB9_0.3		✓		✓	✓
ES1532447-024	[29-Sep-2015]	SB9_1.0	✓				
ES1532447-025	[29-Sep-2015]	SB10_0.9		✓	✓		✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ADAM SULLIVAN

- *AU Certificate of Analysis - NATA (COA)	Email	adam@sullivan-es.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	adam@sullivan-es.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	adam@sullivan-es.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	adam@sullivan-es.com.au
- A4 - AU Tax Invoice (INV)	Email	adam@sullivan-es.com.au
- Chain of Custody (CoC) (COC)	Email	adam@sullivan-es.com.au
- EDI Format - XTab (XTAB)	Email	adam@sullivan-es.com.au

CHAIN OF CUSTODY FORM

Sheet 1 of 2

THIS COLUMN FOR LAB USE ONLY

Job Code:

Due Date:

FROM: SULLIVAN Environmental Sciences

DATE: 29/9/15

TO: ALS Environmental

Sullivan Environmental Sciences
PO Box 5248
Turramurra NSW 2074
Ph: 0400 500 264
Email: adam@sullivan-es.com.au

Project No: SES_424

Project Manager: A. Sullivan

Agreement No:

Sampler(s):

Signature(s):

Checked:

Custody seal intact? YES NO

Sample cold? YES NO

Released by:

Date: 29/9/15 Time:

Received by: Warida

Date: 290918 Time: 1500

Container Size, Type, Preservative and Analysis

Container Identification

Lab identification	Date	Time	Matrix	Sample Number	Comments	Total no	Tick required analytes						
Size													
Type*													
Preservative Code													
Analytes							TRH/BTEXN PAH/8 metals	Asbestos ID	OC/OP	Hold			
	28/9		Solid	TP1_0.5		2	X	X					
				QC1		1	X						
				TP2_1.4		2	X	X					
				TP3_0.4		2	X	X					
				TP4_1.0		2	X		X				
				TP5A_0.8		2				X			
				TP5B_1.5		2	X	X					
				TP6B_0.4		2	X	X					
				TP7A_0.3		2	X		X				
				TP8_0.4		2	X	X					
				SB1_0.4		2	X	X					
				SB1_1.5		1				X			
					TOTAL	22	10	7	2	2			

Remarks:

* Container Type and Preservative Codes: P = Neutral Plastic; N = Nitric Acid Preserved; C = Sodium Hydroxide Preserved; J = Solvent Washed Acid Rinsed Jar; S = Solvent Washed Acid Rinsed Glass Bottle; VC = Hydrochloric Acid Preserved Vial; VS = Sulfuric Acid Preserved Vial; BS = Sulfuric Acid Preserved Glass Bottle; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle

Courier Job No:

Specify Turnaround Time:

NOTE: SAMPLES MAY CONTAIN DANGEROUS AND HAZARDOUS SUBSTANCES

CHAIN OF CUSTODY FORM

Sheet 2 of 2

THIS COLUMN FOR LAB USE ONLY

FROM: SULLIVAN Environmental Sciences

DATE: 29/9/15 TO: ALS

Container Size, Type, Preservative and Analysis

Container Identification

Job Code:

PO Box 5248
Turramurra NSW 2074

Ph: 0400 500 264 Email: adam@sullivan-es.com.au

Due Date:

Project No: SES-424
Project Manager: A. Sullivan
Agreement No:

Sampler(s):
Signature(s):
Checked:

Size
Type*
Preservative Code

Analytes: TRH/BTEXN/PAH/8 metals; Asbestos ID; OC/OP; Hold

Custody seal intact? YES NO

Sample cold? YES NO

Released by:
Date: 29/9/15 Time:

Received by: Wanid
Date: 29091R Time: 1500

Lab identification	Date	Time	Matrix	Sample Number	Comments	Total no	Tick required analytes						
	28/9		Solid	SB2_0.3		2				X			
	"			SB2_0.8		1	X		X				
	"			SB3_0.2		2	X		X				
	"			QC2		1	X						
	29/9			SB4_0.3		2	X		X				
	"			SB5_0.5		2	X	X					
	28/9			SB6_0.5		2				X			
	"			SB6_1.2		1	X	X					
	29/9			SB7_1.0		2	X	X					
				SB8_0.8		2	X	X					
				SB9_0.3		2	X		X				
				SB9_1.0		1				X			
				SB10_0.9		2	X	X					
					TOTAL	22	10	5	4	3			

Remarks:

* Container Type and Preservative Codes: P = Neutral Plastic; N = Nitric Acid Preserved; C = Sodium Hydroxide Preserved; J = Solvent Washed Acid Rinsed Jar; S = Solvent Washed Acid Rinsed Glass Bottle; VC = Hydrochloric Acid Preserved Vial; VS = Sulfuric Acid Preserved Vial; BS = Sulfuric Acid Preserved Glass Bottle; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle

Courier Job No:

Specify Turnaround Time:

NOTE: SAMPLES MAY CONTAIN DANGEROUS AND HAZARDOUS SUBSTANCES