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Goulburn Wheat Yards Assessment

Offsite Lead Delineation Preliminary Site Investigation

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Goulburn Wheat Yards Assessment
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Approved by	**A. Nolan**
Description	**This document presents the results of an environmental assessment to assess the potential offsite risk of lead contamination surrounding the Goulburn Wheat Yards.**

Ramboll
Level 2, Suite 18 Eastpoint
50 Glebe Road
PO Box 435
The Junction
NSW 2291
Australia

T +61 2 4962 5444
https://ramboll.com

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Ramboll Australia Pty Ltd.
ACN 095 437 442
ABN 49 095 437 442

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EXECUTIVE SUMMARY

Ramboll Australia Pty Ltd (Ramboll) was engaged by the Australian Rail Track Corporation Ltd (ARTC) to undertake a preliminary investigation to provide an offsite lead delineation assessment surrounding the Goulburn Wheat Yards site ("the Wheat Yards site").

Previous investigations identified the Wheat Yards site has had a long history of rail related and agricultural activities. These investigations identified elevated lead concentrations in surface soil and shallow fill at the site that present an unacceptable risk to human health and the environment and require remediation. The Wheat Yards site is subject to a Statutory Site Audit (the Audit) under Part 4 of the *Contaminated Land Management Act 1997* (CLM Act), and this investigation is considered relevant for the Audit where the Auditor (Brad May, Epic Environmental Pty Ltd (Epic Environmental)) is required to consider offsite migration of contamination and potential risks to offsite ecological and human receptors. Based on previous investigations at the Wheat Yards site, lead was reported as the primary contaminant of concern (CoC), exceeding the adopted health investigation level (HIL), with co-located arsenic, copper and zinc exceedances of their respective ecological investigation levels (EILs) for a commercial/industrial land use.

The objectives of this investigation were to:

- Inform the potential for the presence and extent of offsite lead contamination and migration (if any) surrounding the Wheat Yards site, as well as co-located arsenic, copper, and zinc.
- Assess the potential or actual risks to offsite human health and/or the environment posed by the primary CoC lead, as well as co-located arsenic, copper and zinc, identified at the Wheat Yards site.
- Determine whether further investigations are warranted.

The scope of work included a detailed site inspection and systematic soil sampling program using field portable X-ray fluorescence (fpXRF) and laboratory analysis of soils for lead, as well as co-located arsenic, copper and zinc, for correlation to fpXRF samples, to delineate the presence and extent of lead contamination and migration offsite.

The results of the investigation identified the following:

- Arsenic and lead were below the adopted site assessment criteria in all samples.
- Elevated copper and zinc concentrations were reported above the adopted ecological investigation levels (EILs) for these metals. The exceedances are considered due to the adoption of conservative EIL criteria in the absence of site-specific physicochemical soil properties.

None of the samples collected during this offsite investigation reported elevated lead or arsenic concentrations, thus the source of the zinc and copper is likely a result of naturally occurring metals in the soil.

The preliminary conceptual site model (CSM), developed in the Offsite Lead Delineation Sampling and Analysis Quality Plan (SAQP) (Ramboll, 2023), was refined following the completion of the offsite investigation, and the evaluation of source-pathway-receptor linkages identified:

- There was no offsite migration of lead contamination from the Wheat Yards site and therefore no complete exposure pathways from the Wheat Yards site to offsite ecological receptors, including flora fauna of the Mulwaree River.
- There was no offsite migration of lead contamination from the Wheat Yards site and therefore no complete exposure pathways to the offsite residents and recreational users, offsite intrusive maintenance workers and offsite workers.

- There is the potential for plant root uptake exposure from copper and zinc concentrations, however, the vegetation and transient wildlife present within the offsite road verge study area are considered to be of low ecological value and the copper and zinc levels are considered representative of natural background ranges.

Identified data gaps include:

- The degree and extent of contaminants of potential concern (CoPCs) associated with historical use of the Wheat Yards site including railyard use, agricultural use, former fuel depots and transformer yards have not been adequately assessed. Soil sampling was co-ordinated to address the potential for offsite migration of lead (and co-located arsenic, copper and zinc) contamination only. The driver to assess these other CoPCs will be based on the results of additional onsite investigation, which has not yet been completed.
- Groundwater and surface water was not assessed as part of this investigation. Ramboll do not consider this is warranted based on limited impacts to shallow soils. There is potential for contamination from other CoPCs onsite that have not yet been assessed to impact surface water and groundwater offsite.
- One open drain and one ephemeral tributary were observed during the site inspection to be leaving/entering the site. The sample of drain sediment analysed during this investigation reported low arsenic, copper, lead and zinc concentrations well below the adopted EILs. The tributary was sampled by Parsons Brinkerhoff in 2011, which reported lead concentrations of 1 µg/L and 2 µg/L. However, the tributary was sampled on the upgradient side of the site. It is considered that there is potential for metals and other CoPCs to be migrating from the site into the drain/tributary and connecting with Mulwaree River, however based on the metals concentrations reported within the offsite study area during this investigation, the potential for this to occur is considered to be low.

Notwithstanding the vertical limitations of the soil sampling, the results of the investigation indicate that lead contamination has not migrated offsite into the study area and there are no risks to offsite human health and/or the environment posed by potential lead contamination. No further assessment of lead contamination offsite is required.

ABBREVIATIONS

	Description
%	per cent
µg/L	Micrograms per Litre
µg/m^3	Micrograms per Cubic Metre
ha	Hectare
km	Kilometres
m	Metre
mAHD	Metres Australian Height Datum
mbgl	Metres below ground level
mg/kg	Milligrams per Kilogram
mg/L	Milligrams per Litre
mm	Millimetre
ppm	Parts Per Million
ACL	Added Contaminant Limit
AHD	Australian Height Datum
BTEXN	Benzene, Toluene, Ethylbenzene, Xylenes & Naphthalene (Monocyclic Aromatic Hydrocarbons)
CEC	Cation Exchange Capcity
CLM Act	NSW Contaminated Land Management Act 1997
CoC	Contaminant of Concern
CoPC	Contaminant of Potential Concern
Council	Goulburn Mulwaree Council
DSI	Detailed Site Investigation
DP	Deposited Plan
DQI	Data Quality Indicator
DQO	Data Quality Objective
EIL	Ecological Investigation Level
EPA	Environment Protection Authority (NSW)
ESL	Ecological Screening Level
fpXRF	Field Portable X-ray Fluorescence
Heavy metal(loid)s	Comprising arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), mercury (Hg), nickel (Ni) and zinc (Zn)
HIL	Health Investigation Level
HSL	Health Screening Level
LOD	Limit of Detection
LOR	Limit of Reporting
Mercury	Inorganic mercury unless noted otherwise
NATA	National Association of Testing Authorities
NEPM	National Environment Protection Measure
n	Number of Samples
OCP	Organochlorine Pesticides
OPP	Organophosphorus Pesticides
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
pH	A measure of acidity, hydrogen ion activity
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RAP	Remediation Action Plan
RPD	Relative Percent Difference

	Description
SAQP	Sampling and Analysis Quality Plan
TPH	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbons
UCL	Upper Confidence Limit
UST	Underground Storage Tank
-	On tables is "not calculated", "no criteria" or "not applicable"

1. Introduction

Ramboll Australia Pty Ltd (Ramboll) was engaged by Australian Rail Track Corporation (ARTC) to provide an offsite lead delineation assessment surrounding the Goulburn Wheat Yards site ("the Wheat Yards site"). The Wheat Yards site is located between rail chainage 225.6 km – 227 km on Lot 1 DP1187262, part of Lot 2 DP1192120 and part Lot 2 DP 1185735 adjacent to Sloane Street, on the upside of the southern portion of the Goulburn Railway Yards. The Wheat Yards site is approximately 76,900 m^2 and comprises five railway sidings, and several former third-party lease areas, including the former JS Hollingsworth site and former Goulburn Caltex Depot.

The study area for this offsite lead delineation was defined by ARTC in the request for quotation dated 18 November 2022 and includes Sloane Street and several streets to the east and west of the site. The locality of the Wheat Yards site and the offsite study area, which is the subject of this investigation, are presented in **Figure 1**, **Appendix 1** and the site layout is presented in **Figure 2, Appendix 1**.

1.1 Background

Several investigations have previously been carried out at the site, including specific investigations targeting the former JS Hollingsworth site (scrap metal storage and recycling facility) and two former bulk fuel depots – the southernmost depot was owned/managed by Caltex and the ownership/management of the northernmost depot is unknown.

Previous investigations indicate the site has a long history of rail related and agricultural activities. It is understood the railway sidings were constructed circa 1918 to transfer wheat. The railway yards were then used for the storage and transport of wool and livestock within the southern portion of the site. Anecdotal evidence gathered during a previous investigation indicated the No. 1 railway siding road was historically used as a siding for the former Woodlawn copper-zinc mine.

The previous investigations identified elevated lead concentrations in surface soil and shallow fill at the site that present an unacceptable risk to human health and the environment and require remediation. The site is subject to a Statutory Site Audit (the Audit) under Part 4 of the *Contaminated Land Management Act 1997* (CLM Act), and this investigation is considered relevant for the Audit where the Auditor (Brad May, Epic Environmental Pty Ltd (Epic Environmental)) is required to consider offsite migration of contamination and potential risks to offsite ecological and human receptors.

Ramboll notes that other contaminants of potential concern (CoPCs) have been identified for the Wheat Yards site, including organochlorine pesticides (OCP), organophosphate pesticides (OPP), polychlorinated biphenyls (PCB), heavy metals (cadmium (Cd), hexavalent chromium (CrVI), nickel (Ni), zinc (Zn) and mercury (Hg)), phenols, total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN), polycyclic aromatic hydrocarbons (PAHs), asbestos and per- and polyfluoroalkyl substances (PFAS), but these have not been considered in this investigation.

1.2 Objectives

The objectives of this investigation were to:

- Inform the potential for the presence and extent of offsite lead contamination and migration (if any) surrounding the Wheat Yards site, as well as co-located arsenic, copper, and zinc.
- Assess the potential or actual risks to offsite human health and/or the environment posed by the primary CoC lead, as well as co-located arsenic, copper and zinc, identified at the Wheat Yards site.
- Determine whether further investigations are warranted.

1.3 Scope of Work

The lead delineation assessment was carried out in accordance with the National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM) (NEPC, 2013). The scope of work performed to meet the objectives comprised:

- The scope of work included a detailed site inspection and systematic soil sampling program using field portable X-ray fluorescence (fpXRF) and laboratory analysis of soils for lead, as well as co-located arsenic, copper, and zinc, for correlation to fpXRF samples, to delineate the presence and extent of lead contamination and migration offsite.
- Assessment of fpXRF and laboratory results against the adopted assessment criteria.
- Assessment of data quality and reliability.
- Refinement of the conceptual site model developed in the Offsite Lead Delineation Sampling and Analysis Quality Plan (SAQP) (Ramboll, 2023).
- Conclusions and recommendations
- Preparation of this report.

1.4 Guidance and Regulatory Requirements

This lead delineation assessment has been prepared in general accordance with the following guidance documents:

- National Environment Protection Council (NEPC), *National Environment Protection (Assessment of Site Contamination) Measure 1999*, as amended 2013 (NEPC, 2013).
- NSW EPA, *Guidelines for the Site Auditor Scheme (3rd Edition)* (NSW EPA, 2017)
- NSW EPA, *Guidelines on the duty to report contamination under the Contaminated Land Management Act 1997* (NSW EPA 2015)
- NSW EPA, *Contaminated Land Guidelines: Consultants Reporting on Contaminated Land* (NSW EPA 2020)
- NSW EPA, *Sampling design part 1 - application* (NSW EPA, 2022a)
- NSW EPA, *Sampling design part 2 – interpretation* (NSW EPA, 2022b)
- US EPA 2007, *Method 6200, Field Portable X-Ray Fluorescence Spectrometry for the Determination of Elemental Concentrations in Soil and Sediment* (US EPA Method 6200 (2007)).

2. Site Description

2.1 Site Identification

The site locality and layout are shown in **Figures 1** and **2**, **Appendix 1**. The site details are presented in **Table 2-1**.

Table 2-1: Site Identification

Information	Description
Street Address:	Off Sloane Street, Goulburn, NSW 2580
Identifier:	Lot 1 DP1187262, part of Lot 2 DP1192120 and part Lot 2 DP 1185735
Site Area:	Approximately 76,900 m^2 (7.69 hectare (ha))
Local Government:	Goulburn Mulwaree Council
County and Parish:	County of Argyle, Parish of Goulburn
Owner:	Transport for New South Wales (TfNSW)
Leased by:	ARTC
Occupied by:	ARTC
Current Site Use:	Commercial / Industrial – Railway
Zoning:	IN1: General Industrial

2.2 Site Details

The Wheat Yards site is located between rail chainage 225.6 km – 227 km on the upside of the Main South railway line. Cavvanba (2022a) reported the site is accessed via Sloane Street in the central portion of the site and is predominantly unsealed. In the absence of a surveyed boundary, Cavvanba (2022a) considered the 'six foot' between the Main South up line and the Refuge Loop line to the east of the site to be the eastern site boundary. For the purposes of this assessment, this boundary has been adopted as well. The site layout is provided as **Figure 2**, **Appendix 1**.

Cavvanba (2022a) stratified the site into the following areas of concern, as shown on **Figure 2**, **Appendix 1**:

- Area A: former fuel depot in northern portion of site (approximately 5,000 m^2)
- Area B: former wheat yard sidings spanning the entire length of the site (approximately 5.4 ha)
- Area C: former stockyards in southern portion of the site (approximately 1.2 ha)
- Area D: access track located in southern portion of the site (approximately 2,000 m^2)
- Area E: former JS Hollingsworth & Sons in central-southern portion of the site (approximately 3,200 m^2)
- Area F: former Caltex depot in southern portion of the site (approximately 4,500 m^2).

2.3 Study Area

The study area was provided in the ARTC request for quotation of 18 November 2022, and comprises the following public road verges in close proximity to the Wheat Yards site, as shown in **Figures 1** and **2** and **Figures 4a** to **4e**, **Appendix 1**, and is considered "offsite" for the purpose of this investigation:

- Both sides of Sloane Street (approximately 1,500 m)
- Both sides of Ottiwell Street (west) (approximately 200 m)
- Both sides of Ottiwell Street (east) (approximately 130 m)
- Both sides of King Street (approximately 85 m)

- Both sides of Cooma Avenue (approximately 150 m)
- Approximately 100 m down Lansdowne Street (both sides of the road)
- Approximately 100 m down the unnamed road between Lansdowne Street and Finlay Road (both sides of the road)
- Approximately 100 m down Dossie Street (both sides of the road)
- Approximately 100 m down Finlay Road (both sides of the road).

The zoning of the study area comprises a mix of IN1 (General Industrial), RU1 (Primary Production) and R1 (General Residential) (Goulburn Mulwaree Local Environmental Plan 2009). The trigger for assessment for the study area is based on potential offsite lead migration from the site. As the study area comprises public road verges, landowner consent is not considered to be required.

2.4 Land Use

The site is currently used for railway purposes and includes a refuge loop and five railway sidings. Stockyards were formerly present in the southern portion of the site, whilst two former fuel depot was in the northern and southern portions of the site. The study area is currently used for public road verges and reserves.

3. Previous Investigations

The following reports have been provided for the site and/or properties adjacent to the site:

- 'Phase 1 Environmental Contamination Assessment SR45, Goulburn', dated 1996 by CMPS&F Pty Ltd (CMPS&F) (CMPS&F 1996).
- 'Phase 1 Environmental Contamination Assessment SR47, Goulburn', dated 1996 by CMPS&F (CMPS&F 1996a).
- 'Final Report, Groundwater Monitoring Well Installation and Sampling, Caltex Goulburn Depot (Site ID 28800), 13 Sloane St, Goulburn, NSW', dated 11 January 2011 by URS Australia Pty Ltd (URS) (URS 2011).
- 'Combined Phase 1 and 2 Environmental Site Assessment, Caltex Goulburn Fuel Depot, Sloane Street, Goulburn, NSW (Caltex Site ID 22643)' dated September 2011 by Parsons Brinckerhoff Australia Pty Ltd (PB) (PB, 2011).
- 'Remedial Action Plan, Caltex Goulburn Fuel Depot, Sloane Street, Goulburn, NSW (Caltex Site ID 22643)' dated November 2011 by PB (PB, 2011a), and associated notification letter of intention to undertake Category 2 Remediation Works to Goulburn Mulwaree Council dated 17 January 2013.
- 'Statement of Environmental Effects for Building Demolition Application Caltex fuel depot, Sloane Street, Goulburn (Site #22643)', dated 23 March 2012 by PB (PB, 2012) – incomplete.
- 'Demolition, Remediation and Site Validation – Goulburn Depot, Sloane Street, Goulburn NSW (22643)', dated 6 November 2013 by PB (PB, 2013).
- 'Asbestos Containing Material (ACM) Identification Report', dated 24 December 2020 by Trinitas Group (Trinitas) (Trinitas, 2020).
- 'Make-safe Clearance Inspection', dated 24 December 2020 by Trinitas (Trinitas, 2020a).
- 'Goulburn JS Hollingsworth and Sons Site – Preliminary Site Investigation and Detailed Site Investigation', dated May 2021 by GHD Pty Ltd (GHD,2021).
- 'Goulburn – JS Hollingsworth and Sons Site, Supplementary Detailed Site Investigation', dated 23 September 2021 by GHD (GHD, 2021a) – DRAFT.
- 'Goulburn – JS Hollingsworth and Sons Site, Remediation Options Assessment', dated 13 October 2021 by GHD (GHD 2021b) 'Preliminary Site Investigation, K&H Ainsworth Engineering Pty Ltd, Goulburn Wheat Yard Sidings, off Sloane Street, Goulburn, NSW, 2580' dated June 2021 by Cavvanba Consulting Pty Ltd (Cavvanba) (Cavvanba, 2021).
- 'Stockpile Assessment, Off Sloane Street, Goulburn, NSW 2580', dated 22 September 2021 by Cavvanba (Cavvanba, 2021a).
- 'Preliminary Site Investigation, Australian Rail Track Corporation Ltd, Goulburn Railway Yards, off Sloane Street, Goulburn, NSW, 2580' dated October 2021 by Cavvanba (Cavvanba, 2021b).
- 'Environmental Site Assessment, Australian Rail Track Corporation, Goulburn Railway Yard, off Sloane Street, Goulburn NSW 2580', dated January 2022 by Cavvanba (Cavvanba, 2022).
- 'Detailed Site Investigation, Australian Rail Track Corporation, Goulburn Wheat Yard Sidings', dated October 2022 by Cavvanba (Cavvanba, 2022a).
- 'Interim Environmental Management Plan – Goulburn Wheat Yard Sidings, Off Sloane Street, Goulburn NSW 2580', dated 18 January 2023 by Cavvanba (Cavvanba, 2023).

The reports were reviewed, and the reports and results considered relevant to this offsite lead delineation investigation are summarised below.

3.1 Phase 1 Environmental Contamination Assessment SR47 (CMPS&F, 1996a)

3.1.1 Objective and Scope of Works

CMPS&F undertook a detailed assessment of the environmental condition of the JS Hollingworth & Sons property, located in the southern portion of the site (Area E), to identify issues associated with site contamination or other environmental matters. Two surface soil samples were collected and analysed.

3.1.2 Results

The results of the investigation identified that this portion of the site had been used as a scrap metal and recycling yard for at least 25 to 30 years. The results of the two surface soil samples analysed reported heavy metal and total petroleum hydrocarbon (TPH) and polychlorinated biphenyls (PCBs) to be within background ranges or below laboratory detection limits, except for “very high zinc” and “acidic pH”.

3.1.3 Conclusions and Recommendations

CPMS&F concluded the likelihood of contamination to be high and recommended a detailed assessment be undertaken to determine the presence and extent of contamination at the site associated with scrap metal and glass recycling, and that groundwater sampling may be necessary.

3.2 Combined Phase 1 and 2 Environmental Site Assessment (PB, 2011)

3.2.1 Objective and Scope of Works

The objectives of PB’s 2011 investigation were to assess the soil and groundwater contamination status at the former Caltex Fuel Depot (Area F), which included a desktop site history review, site inspection and soil sampling from 15 boreholes and installation of nine groundwater monitoring wells for subsequent sampling. Two surface water samples were also collected from a tributary of the Mulwaree River running parallel to the southwestern boundary of the former depot.

3.2.2 Results

Groundwater was determined to be flowing to the east, towards the Mulwaree River, consistent with local topography.

The results of the investigation identified lead concentrations in the soil to be well below criteria applicable for a commercial/industrial land use. Lead concentrations in groundwater were low and unlikely to present a risk to aquatic ecosystems. Lead concentrations of 1 µg/L and 2 µg/L were reported in surface water samples. Elevated TPH concentrations were reported in soil and groundwater at some locations above PB’s adopted criteria, indicating the soil and groundwater at the site had been impacted by the site use as a fuel depot.

3.2.3 Conclusions and Recommendations

PB concluded that localised areas of soil and perched water had been impacted by hydrocarbons, considered likely to be attributable to historical spills and leaks in these areas during the former fuel depot activities. To facilitate Caltex’s lease relinquishment and to allow for the site to be suitable for any allowable use under the land use zoning in the future, which include childcare centres and schools, PB considered that remediation works should be carried out to remove the impacted contaminated soil.

3.3 Demolition, Remediation and Site Validation (PB, 2013)

3.3.1 Objective and Scope of Works

The purpose of the demolition and remediation was to restore the former Caltex depot (Area F) to its original condition and validate it as suitable for continued industrial/commercial land use to facilitate relinquishment of the lease to the ARTC.

The scope of work included:

- Removal of hazardous material (including ACM) in building structures at the site.
- Demolition of all site buildings and structures.
- Pump out and disposal of any residual fuel/water from above ground storage tanks (ASTs) and underground storage tanks (USTs) and associated fuel lines.
- Removal of all ASTs, USTs and associated fuel infrastructure including aboveground, underground and protruding pipework, unloading points, valves and other infrastructure.
- Removal of a surge tank and associated oil/water separator and holding tank and septic tank.
- Test pitting in areas of previously identified impact yet to be vertically delineated.
- Excavation of hydrocarbon contaminated soil, and land-farming to minimise offsite disposal volumes.
- Remediation of hydrocarbon impacted perched groundwater via enhanced biodegradation.
- Validation of excavations and stockpiles, and backfilling of validated excavations.

3.3.2 Results

The results of the validation samples identified lead concentrations in the soil to be well below criteria applicable for a commercial/industrial land use. Lead concentrations in groundwater were low and unlikely to present a risk to aquatic ecosystems. Total recoverable hydrocarbons (TRH) >C10-C16 (F2) and TRH >C16-C34 (F3) concentrations did exceed ecological screening levels (ESLs) in the west of the site associated with a former UST farm and AST farm.

3.3.3 Conclusions and Recommendations

PB concluded that the residual impacts identified are not considered to pose a health risk to future site users and the site is considered to be suitable for the allowable land use (commercial/ industrial). PB noted the residual TRH concentrations were recorded at a maximum depth of 2.0 m below ground level (bgl), and that although these concentrations may represent a potential stress to vegetation at the site, based on the site zoning, PB concluded it is unlikely that vegetation will be grown at the site.

3.4 Preliminary Site Investigation and Detailed Site Investigation, JS Hollingsworth & Sons (GHD, 2021)

3.4.1 Objective and Scope of Works

GHD undertook a combined preliminary site investigation (PSI) and detailed site investigation (DSI) at the JS Hollingworth & Sons property (Area E) to identify any contamination that poses human health or ecological exposure risks to the extent that requires management or remediation, assess the need for remediation and to determine if there was a duty to report the site under Section 60 of the CLM Act.

The scope of work included a desktop review of historical information, site inspection and soil sampling at 16 locations and the installation and sampling of three groundwater monitoring wells.

3.4.2 Results

The key findings from the combined PSI/DSI include:

- The site had been used for the storage of scrap metal since the late 1960s.
- GHD reported fill comprising silty sandy clay with some foreign anthropogenic inclusions to a maximum depth of 1.3 mbgl, underlain by orange sandy silty clay. Weathered rock began from approximately 5 mbgl, with bedrock from approximately 6 mbgl.
- Lead contamination in excess of HIL D criterion was identified within fill material up to 11,000 mg/kg across the site.
- PCBs and TRH concentrations were reported to exceed adopted site criteria at a number of locations.

- ACM was observed on the site surface and within fill material.

3.4.3 Conclusions and Recommendations

GHD concluded that the site was not suitable for a commercial/industrial land use and that there was a duty to report the site under Section 60 of the CLM Act. GHD also recommended that further investigation was required to inform a remedial action plan (RAP).

3.5 Supplementary DSI, JS Hollingsworth & Sons DRAFT (GHD, 2021a)

3.5.1 Objective and Scope of Works

GHD was engaged by ARTC to undertake a supplementary DSI to delineate areas of lead, PCB and TRH soil contamination identified at the JS Hollingsworth & Sons property (Area E) (GHD, 2021), provide waste classification of soil for offsite disposal and assess whether soil contamination has migrated offsite.

The scope of work to achieve the objectives included additional analysis of the DSI (GHD, 2021) soil samples for toxicity characteristic leaching procedure (TCLP), and soil sampling at an additional 26 sampling locations (24 test pits to 1.5 mbgl and two hand augers to 1.0 mbgl).

3.5.2 Results

The key findings from the supplementary DSI included:

- Fill comprising orange silty sandy clay with some anthropogenic materials comprising ceramic, brick, glass, plastic, concrete, tiles, metal, ballast and coal, to a maximum depth of 1.3 mbgl.
- The fill was underlain by natural low plasticity clay with some sand and silt.
- Lead concentrations in excess of the adopted human health investigation level (HIL) and ecological investigation level (EIL) criteria identified in the DSI (GHD, 2021) were confirmed.
- PCB and TRH concentrations were delineated.
- The contamination had not migrated offsite.

3.5.3 Conclusions and Recommendations

GHD concluded that the site is not considered suitable for commercial/industrial land use and remediation is required. Consistent with the DSI (GHD, 2021) GHD considered there was a duty to notify contamination under Section 60 of the CLM Act. GHD recommended a remediation options assessment and remedial action plan should be prepared.

3.6 Remediation Options Assessment, JS Hollingsworth & Sons DRAFT (GHD, 2021b)

3.6.1 Objective and Scope of Works

GHD prepared a remediation options assessment (ROA) in response to their previous investigations (2021 and 2021a) for the JS Hollingsworth & Sons property (Area E) to preliminarily evaluate possible remedial options to address contamination identified on site and to make the site suitable for the commercial/industrial use proposed by ARTC.

The scope of work was limited to a review of previous investigations and a desktop assessment of potential management/remediation options.

3.6.2 Results and Conclusions

The ROA identified three remedial options for ARTC to consider, including excavation of the contaminated soil for consolidation in a containment cell onsite; leave the contamination in-situ and contain with a cap and excavation of contaminated soil and dispose offsite at a licensed landfill/treatment facility.

3.7 Preliminary Site Investigation, Goulburn Wheat Yard Sidings (Cavvanba, 2021)

3.7.1 Objective and Scope of Works

Cavvanba undertook a PSI of the entire site for K & H Ainsworth Engineering Pty Ltd (K&H), who were proposed to lease the site from ARTC for use of the entire siding for rolling stock inspections, basic maintenance and refuelling. The objective of the PSI was to establish baseline conditions prior to the commencement of the lease and to determine whether unacceptable risks to human health or the environment exist at the site and if further investigation, management, monitoring and/or remediation is required.

The scope of work included a desktop review of historical information, site inspection and 20 boreholes to a maximum depth of 0.7 m bgl using a hand auger. Twenty soil samples were collected and analysed for a broad screen of potential contaminants, including TRH, benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN), heavy metal(loid)s (arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), mercury (Hg), nickel (Ni) and zinc (Zn)), polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides (OCPs), organophosphorus pesticides (OPPs), polychlorinated biphenyls (PCBs) and asbestos (presence/absence).

3.7.2 Results

The site history review indicated the site has a long history of industrial activity, commencing in the early 1900s. The majority of the site was used for the storage and transfer of wheat, wool and/or livestock, while the northern and southern portions of the site were historically used for the bulk storage and transfer of fuels and oils. A small central portion of the site was used as a scrap metal storage and recycling facility, which was excluded from the PSI by Cavvanba as it was reported as being managed separately by ARTC. Anecdotal evidence from site workers indicated that the No. 1 railway siding road was historically used as a siding for the former Woodlawn Mine. Cavvanba reported the Woodlawn Mine was a metal ore concentrate mine which commenced operations in 1978.

Cavvanba considered the primary activities associated with contamination to be the long history of railyards, which includes the historical operation of bulk fuel depots (particularly in the northern portion), fill material containing heavy metals and the presence of ACM material on soil.

Cavvanba reported the site to be predominantly unsealed, comprising gravelly sand clay / sandy gravel fill material to at 0.5 mbgl, underlain by sandy clay to depth of investigation (0.7 mbgl). Close to the railway lines, fill material was reported to consist of black sandy gravel with evidence of spent coal ash. The central and northern portion of the site had undergone (and was still in the process of) significant earthworks for the update of stormwater draining infrastructure. Isolated fragments of non-friable ACM were identified on the site surface.

The soil analytical results identified widespread lead contamination in excess of HIL D criterion within fill material up to 13,100 mg/kg across the site. Arsenic, copper, lead and zinc were also reported in excess of the adopted EILs.

3.7.3 Conclusions and Recommendations

Cavvanba concluded that the site had been filled with fill material comprising lead, arsenic, copper and zinc concentrations exceeding the HIL and/or EIL criteria, however the nature and extent of which had not been adequately characterised. Cavvanba recommended interim management measures should be implemented to manage any immediate unacceptable risk to human health and the environment associated with the elevated lead concentrations onsite.

Cavvanba also considered the nature and extent of potential soil and/or groundwater contamination in the northern portion of the site, within the footprint of the former bulk fuel depot, and the nature and extent of ACM at the site remains uncertain.

3.8 Stockpile Assessment (Cavvanba, 2021a)

3.8.1 Objective and Scope of Works

Cavvanba undertook an assessment to determine the contamination status of stockpiled material (black and brown clayey sandy gravel material with approximately 20% rail ballast) located within the northern portion of the site (Area A), generated from earthworks within the rail corridor, to determine whether the material was suitable for beneficial reuse within the railway corridor or whether potential management options, remediation/offsite disposal is required.

Cavvanba advanced 20 sampling locations to a maximum depth of 1 m within the two stockpiles and 20 samples were collected and analysed for a broad screen of potential contaminants, including TRH, BTEXN, heavy metal(loid)s (As, Cd, Cr, Cu, Pb, Hg, Ni and Zn) and PAHs.

3.8.2 Results

Lead was reported in excess of the adopted human health criterion for a commercial/industrial land use of 1,500 mg/kg in five of the ten samples from Stockpile 1, but below the adopted HIL in the second stockpile. Cavvanba considered the lead concentrations were widespread throughout Stockpile 1. Copper and zinc were variably elevated above their adopted EIL for a commercial/industrial land use in both stockpiles.

3.8.3 Conclusions and Recommendations

Cavvanba concluded that Stockpile 1 (approximately 430 m^3) was not suitable for a commercial/industrial land, due to the lead exceedances, use without appropriate management or further risk assessment and recommended interim management measures to ensure the stockpile is not unintentionally disturbed or relocated. Cavvanba considered Stockpile 2 (approximately 940 m^3) suitable for beneficial reuse within the corridor.

3.9 Environmental Site Assessment, Goulburn Railway Yard (Cavvanba, 2022)

3.9.1 Objective and Scope of Works

Cavvanba was commissioned by ARTC to undertake an environmental site assessment (ESA) of the Goulburn Railway Yard, which included a large portion of the site (i.e., the Goulburn Wheat Yard Sidings, Area B), as part of the Southern Highland Overtaking Opportunities (SHOO) project. The objective of the ESA was to assess whether unacceptable risk to human health or the environmental exist and to provide a reasonable characterisation of contamination.

The scope of work included a site walkover and intrusive investigation, which comprised 35 sampling locations within the site (Goulburn Wheat Yard Sidings) footprint.

3.9.2 Results

The key findings from the ESA in relation to the site (the Goulburn Wheat Yard Sidings), include:

- The site was unsealed and the soil profile generally comprised gravelly sandy clay/sandy gravel fill to a depth of at least 1.4 mbgl, underlain by orange-brown sandy clay. Like the PSI (Cavvanba, 2021), fill material was reported to consist of black sandy gravel with evidence of spent coal ash in close proximity to the railway line.
- Lead contamination, with a maximum concentration of 44,000 mg/kg, was considered widespread within fill material to a maximum depth of 0.5 mbgl, extending laterally for approximately 1.3 km adjacent to the former Wheat Yard Sidings.
- An elevated TRH concentration in excess of the health screening levels (HSLs) for vapour intrusion was localised in the vicinity of the former Caltex bulk fuel depot in the southern portion of the site.

- An elevated benzo(a)pyrene concentration in excess of its HIL D criterion was reported in one location.
- Variably elevated arsenic, copper, lead, zinc, TRH and benzo(a)pyrene concentrations were reported in excess of their adopted EILs at a number of locations across the site.

3.9.3 Conclusions and Recommendations

Cavvanba concluded there was an unacceptable risk to human health and the environment, primarily related to the elevated lead concentrations in surface soil, which are exposed and accessible to site workers. Cavvanba considered the presence of elevated heavy metal(loid)s was likely associated with historical uncontrolled filling across the entire Railway Yards, and additional investigation was considered necessary to delineate the extent of contamination within the site (the Goulburn Wheat Yard Sidings).

3.10 Detailed Site Investigation, Goulburn Wheat Yard Sidings (Cavvanba, 2022a)

3.10.1 Objective and Scope of Works

The objective of the DSI was to further understand and delineate extent of contamination at the site, to characterise the contamination present at the site to inform an assessment of potential risks to human health and/or the environment and to provide further information to assist the NSW EPA in their decision making on whether the site requires regulation under the CLM Act.

The scope of work included intrusive investigations, comprising 85 soil sampling locations and installation and sampling of six groundwater monitoring wells. Cavvanba excluded the former JS Hollingsworth & Sons property and the former Caltex depot from the DSI based on previous investigations of these areas.

3.10.2 Results

The site was mostly unsealed, except for a 15 m concrete driveway in the former fuel depot in the northern portion of the site (Area A) and small areas of asphalt and concrete in the centre of the former wheat yard sidings (Area B). Fill generally comprised silty clayey gravel/gravelly clay of varying depths to a maximum 1.8 mbgl (in the northern portion of the site) underlain by light brown/red mottled sandy clay. As per previous investigations (Cavvanba 2021 and 2022) fill material close to the railway lines was reported to consist of black sandy gravel with evidence of spent coal ash.

Anthropogenic material, including glass, asphalt, plastic, concrete, bricks, tiles and metal fragments, were observed in fill across the northern former fuel depot and across the wheat yard sidings. Whilst the stockpiles assessed in Cavvanba (2021a) remained several smaller stockpiles were located on the northern fuel depot area (Area A) and the wheat yard sidings (Area B).

Slight hydrocarbon staining and/or odours were noted in several samples collected from the former fuel depot area (Area A), and a thick layer of green-stained soil was observed at one location within the former wheat yard sidings (Area B). Non-friable ACM was observed on surface soil within the former wheat yards sidings (Area B).

Groundwater was encountered between 4.0 mbgl to 5.5 mbgl within siltstone and sandy clay across the central and northern portions of the site, with hydrocarbon odours and sheens reported in wells located downgradient of former ASTs in the former fuel depot (Area A).

A summary of results extracted from Cavvanba (2022a) are presented in **Table 3-1** to **Table 3-4**.

Table 3-1: Soil Analytical Summary – Former Fuel Depot (Area A) (Cavvanba 2022a)

Analyte	Health criteria	Ecological criteria	Analytical data			
	HIL / HSL (mg/kg)	EILs/ESLs (mg/kg)	No. samples analysed	Number of detects	Max' (mg/kg)	Meets screening criteria?
Metals						
Arsenic	3,000	160	19	16	154	Yes
Cadmium	900	-		8	2	Yes
Chromium	3,600	670		19	64	Yes
Copper	240,000	300		19	232	Yes
Lead	**1,500**	1,800		19	**4,670**	**No**
Nickel	6,000	290		19	52	Yes
Zinc	400,000	700		19	911	No
Mercury	730/180	-		11	2	Yes
TRH and BTEXN						
Benzene	3[1]	75	13	0	<0.2	Yes
Toluene	99,000	135		0	<0.5	Yes
Ethylbenzene	27,000	165		0	<0.5	Yes
Xylenes	81,000	180		0	<0.5	Yes
Naphthalene	29,000	370		0	<0.5	Yes
F1 TRH C_6-C_{10}	260[1]	215		1	12	Yes
F2 TRH >C_{10}-C_{16}	1,000[2]	170		1	300	No
F3 TRH >C_{16} – C_{34}	27,000[3]	1,700		2	320	Yes
F4 TRH >C_{34} – C_{40}	10,000[2]	3,300		1	280	Yes
PAHs and Phenols						
B(a)P TEQ	40	-	13	0	<0.5	Yes
B(a)P	-	1.4		0	<0.5	Yes
Total (PAHs)	4,000	-		0	<0.5	Yes
Phenol	240,000	-	7	0	<0.5	Yes
OCPs / OPPs and PCBs						
Sum of DDD + DDE + DDT	3,600	360	7	0	<0.05	Yes
PCBs	7	-		0	<0.1	Yes
Asbestos						
Asbestos	**Detect**	-	1	1	-	**No**

Table notes:
- = not detected above the LOR / no applicable assessment criteria.
Refer to Tables 2 – 8 for a complete list of screening criteria.
1 – Health screening levels for commercial land use (sand soils), 0m to <1m. Exceedance is shown in **bold.**
2 – Health investigation levels for commercial landuse. Exceedance is shown in **bold**.
3 – Management Limits fine soil – exceedance is shown in *italic*.
4– Ecological screening and investigation levels for commercial/industrial landuse. Exceedance is shown as underline.

Table 3-2: Soil Analytical Summary – Former Wheat Yard Sidings (Area B) (Cavvanba 2022a)

Analyte	Health criteria	Ecological criteria	Analytical data			
	HIL / HSL (mg/kg)	EILs/ESLs (mg/kg)	No. samples analysed	Number of detects	Max' (mg/kg)	Meets screening criteria?
Metals						
Arsenic	3,000	<u>160</u>	106	94	<u>839</u>	<u>No</u>
Cadmium	900	-		78	321	Yes
Chromium	3,600	670		105	100	Yes
Copper	240,000	<u>300</u>		106	<u>3,840</u>	<u>No</u>
Lead	**1,500**	<u>1,800</u>	110	110	**<u>193,000</u>**	**<u>No</u>**
Nickel	6,000	<u>290</u>	106	106	<u>1,000</u>	<u>No</u>
Zinc	400,000	<u>700</u>		106	<u>7,560</u>	<u>No</u>
Mercury	730/180	-		55	29	Yes
TRH and BTEXN						
Benzene	3[1]	75	28	0	<0.2	Yes
Toluene	99,000	135		0	<0.5	Yes
Ethylbenzene	27,000	165		0	<0.5	Yes
Xylenes	81,000	180		0	<0.5	Yes
Naphthalene	29,000	370		0	<0.5	Yes
F1 TRH C_6-C_{10}	260[1]	215		0	<50	Yes
F2 TRH >C_{10}-C_{16}	1,000[2]	170		0	<100	Yes
F3 TRH >C_{16} – C_{34}	27,000[3]	1,700		14	1,150	Yes
F4 TRH >C_{34} – C_{40}	10,000[2]	3,300		9	420	Yes
PAHs and Phenols						
B(a)P TEQ	40	-	28	3	2.4	Yes
B(a)P	-	<u>1.4</u>		3	<u>1.8</u>	<u>No</u>
Total (PAHs)	4,000	-		11	20.8	Yes
Phenol	240,000	-	14	0	<0.5	Yes
OCPs / OPPs and PCBs						
Sum of DDD + DDE + DDT	3,600	360	14	2	0.72	Yes
PCBs	7	-		1	3	Yes
Asbestos						
Asbestos	**Detect**	-	3	3	-	**No**

Table notes:
- = not detected above the LOR / no applicable assessment criteria.
Refer to Tables 2 – 8 for a complete list of screening criteria.
1 – Health screening levels for commercial land use (sand soils), 0m to <1m. Exceedance is shown in **bold.**
2 – Health investigation levels for commercial landuse. Exceedance is shown in **bold**.
3 – Management Limits fine soil – exceedance is shown in *italic*.
4– Ecological screening and investigation levels for commercial/industrial landuse. Exceedance is shown as <u>underline.</u>

Table 3-3: Soil Analytical Summary – Former Stockyards (Area C) (Cavvanba 2022a)

Analyte	Health criteria	Ecological criteria	Analytical data			
	HIL / HSL (mg/kg)	EILs/ESLs (mg/kg)	No. samples analysed	Number of detects	Max' (mg/kg)	Meets screening criteria?
Metals						
Arsenic	3,000	160	25	24	56	Yes
Cadmium	900	-		0	<1	Yes
Chromium	3,600	670		25	124	Yes
Copper	240,000	300		25	212	Yes
Lead	1,500	1,800		25	908	Yes
Nickel	6,000	290		25	32	Yes
Zinc	400,000	700		25	404	Yes
Mercury	730/180	-		1	0.2	Yes
TRH and BTEXN						
Benzene	3[1]	75	10	0	<0.2	Yes
Toluene	99,000	135		0	<0.5	Yes
Ethylbenzene	27,000	165		0	<0.5	Yes
Xylenes	81,000	180		0	<0.5	Yes
Naphthalene	29,000	370		0	<0.5	Yes
F1 TRH C_6-C_{10}	260[1]	215		0	<10	Yes
F2 TRH >C_{10}-C_{16}	1,000[2]	170		0	<50	Yes
F3 TRH >C_{16} – C_{34}	27,000[3]	1,700		0	<100	Yes
F4 TRH >C_{34} – C_{40}	10,000[2]	3,300		0	<100	Yes
PAHs and Phenols						
B(a)P TEQ	40	-	10	0	<0.5	Yes
B(a)P	-	1.4		0	<0.5	Yes
Total (PAHs)	4,000	-		1	2.6	Yes
Phenol	240,000	-	6	0	<0.5	Yes
OCPs / OPPs and PCBs						
Sum of DDD + DDE + DDT	3,600	360	6	4	1.79	Yes
PCBs	7	-		0	<0.1	Yes

Table notes:
- = not detected above the LOR / no applicable assessment criteria.
Refer to Tables 2 – 8 for a complete list of screening criteria.
1 – Health screening levels for commercial land use (sand soils), 0m to <1m. Exceedance is shown in **bold.**
2 – Health investigation levels for commercial landuse. Exceedance is shown in **bold.**
3 – Management Limits fine soil – exceedance is shown in *italic.*
4– Ecological screening and investigation levels for commercial/industrial landuse. Exceedance is shown as underline.

Table 3-4: Soil Analytical Summary – Access Track (Area D) (Cavvanba 2022a)

Analyte	Health criteria	Ecological criteria	Analytical data			
	HIL / HSL (mg/kg)	EILs/ESLs (mg/kg)	No. samples analysed	Number of detects	Max' (mg/kg)	Meets screening criteria?
Metals						
Arsenic	3,000	160		7	19	Yes
Cadmium	900	-		0	<1	Yes
Chromium	3,600	670		8	92	Yes
Copper	240,000	300	8	8	32	Yes
Lead	1,500	1,800		8	42	Yes
Nickel	6,000	290		8	17	Yes
Zinc	400,000	700		8	161	Yes
Mercury	730/180	-		0	<0.1	Yes
TRH and BTEXN						
Benzene	3[1]	75		0	<0.2	Yes
Toluene	99,000	135		0	<0.5	Yes
Ethylbenzene	27,000	165		0	<0.5	Yes
Xylenes	81,000	180		0	<0.5	Yes
Naphthalene	29,000	370		0	<0.5	Yes
F1 TRH C_6-C_{10}	260[1]	215	8	0	<10	Yes
F2 TRH >C_{10}-C_{16}	1,000[2]	<u>170</u>		0	<50	Yes
F3 TRH >C_{16} – C_{34}	27,000[3]	1,700		0	<100	Yes
F4 TRH >C_{34} – C_{40}	10,000[2]	3,300		0	<100	Yes
PAHs and Phenols						
B(a)P TEQ	40	-		0	<0.5	Yes
B(a)P	-	-	8	0	<0.5	Yes
Total (PAHs)	4,000	-		0	<0.5	Yes
Phenol	240,000	-	4	0	<0.5	Yes
OCPs / OPPs and PCBs						
Sum of DDD + DDE + DDT	3,600	360	2	0	<0.05	Yes
PCBs	7	-		0	<0.1	Yes

Table notes:
- = not detected above the LOR / no applicable assessment criteria.
Refer to Tables 2 – 8 for a complete list of screening criteria.
1 – Health screening levels for commercial land use (sand soils), 0m to <1m. Exceedance is shown in **bold.**
2 – Health investigation levels for commercial landuse. Exceedance is shown in **bold**.
3 – Management Limits fine soil – exceedance is shown in *italic*.
4– Ecological screening and investigation levels for commercial/industrial landuse. Exceedance is shown as <u>underline.</u>

Lead, chromium and zinc concentrations in groundwater were generally low and marginally above the 95% freshwater species protection levels in three of the six groundwater monitoring wells. Elevated levels of benzene (in excess of drinking water criterion) and naphthalene and phenanthrene (in excess of the 95% freshwater species protection levels) were reported in wells located within the former fuel depot area (Area A).

The locations of previously reported lead HIL exceedances are shown on **Figures 3a** to **3f**, **Appendix 1**.

3.10.3 Conclusions and Recommendations

Cavvanba concluded that there was an unacceptable risk to human health and the environment which requires remediation due to the presence of elevated lead concentrations in surface soil and shallow fill within the former Wheat Yard Sidings (Area B). Cavvanba noted that where lead exceedances were reported, elevated arsenic, copper and/or zinc concentrations were also located, indicating that the source of contamination may be associated with the metal ore concentrate historically deposited in the area. Based on this, Cavvanba considered the source of lead contamination within the former fuel depot in the northern portion of the site (Area A) is likely associated with lead-based paints due to the absence of elevated co-located copper and zinc concentrations.

Based on the groundwater results, Cavvanba concluded there was no indication the groundwater beneath the site had been impacted by surface and shallow fill lead contaminated soil.

3.11 Interim Environmental Management Plan (Cavvanba, 2023)

Cavvanba was commissioned by ARTC to prepare an interim environmental management plan (IEMP) to manage lead and asbestos contamination in soil at the site until additional information is obtained which supports more permanent measures or demonstrates that the site is suitable for its intended land use.

Ramboll note that at the time of preparation of this report, ARTC advised this the IEMP is still in draft form and currently under review.

4. Geology and Hydrogeology

A summary of the geology and hydrogeology for the Wheat Yards site, study area and surrounds is detailed in **Table 4-1**.

Table 4-1: Summary of Geology and Hydrogeology

Site	Details
Geology	The site is underlain by Cainozoic aged alluvium consisting of gravel and sand overlying paleozoic aged Gundary beds, comprising sandstone, siltstone, volcanic mudstone and lithic-quartz sandstone (Cavvanba, 2021). Cavvanba (2022a) reported siltstone bedrock from approximately 2-8m in the north-western portion of the site and 9-12m in the southern portion of the site.
Location and Extent of Fill	Fill generally comprised silty clayey gravel/gravelly clay of varying depths to a maximum 1.8 mbgl (in the northern portion of the site) underlain by light brown/red mottled sandy clay (Cavvanba 2022). (Cavvanba 2021 and 2022) fill material close to the railway lines was reported to consist of black sandy gravel with evidence of spent coal ash. Anthropogenic material, including glass, asphalt, plastic, concrete, bricks, tiles and metal fragments, were observed in fill across the northern former fuel depot and across the wheat yard sidings (Cavvanba 2022).
Acid Sulfate Soils	The site is not located within an acid sulfate soils risk area. eSPADE v2.2 (nsw.gov.au)
Borehole Logs	The borehole logs by Cavvanba 2022a generally comprised fill, underlying orange sandy clay.
Groundwater Bore Search	Nine groundwater bores were found within 500m radius of the site. The purpose of the groundwater bores was for monitoring, water supply or other. The bore depth (m) ranged 5-78m. The deeper aquifer appears to be used for domestic and stock purposes. The shallow aquifer does not appear to be used for any beneficial purposes (Cavvanba 2022a). BOM Australian Groundwater Explorer, 2018 http://www.bom.gov.au/water/groundwater/explorer/map.shtml.
Depth to Groundwater	Groundwater was encountered between 4.0 mbgl to 5.5 mbgl within siltstone and sandy clay across the central and northern portions of the site (Cavvanba 2022a).
Direction and Rate of Groundwater Flow	Cavvanba (2022a) reported that based on surface topography, it is anticipated that regional groundwater generally flows to the east and north, consistent with local topography towards Mulwaree River.
Direction of Surface Water Runoff	The direction of surface water runoff from the site is to the east towards Mulwaree River. Due to the escarpment on the western boundary of the site, stormwater runoff to the west is unlikely.
Summary of Local Meteorology	The lowest mean rainfall for Goulburn is in July (40.3 mm) and the highest mean rainfall is in November (66.1 mm) for the years 1971-2023 (Bureau of Meteorology http://www.bom.gov.au/). The lowest mean temperature for Goulburn is in July (11.5°) and the highest mean temperature is in January (27.9°) for the years 1971-2023 (Bureau of Meteorology http://www.bom.gov.au/).

5. Site Condition and Surrounding Environment

Details observed of the study area during the fieldwork on the 19-21 June 2023 are outlined in **Table 5-1**. Site photographs are shown in **Appendix 2**.

Table 5-1: Site Condition and Surrounding Environment

Site	Description
Topography	Local topography is flat to slightly undulating. The site and surrounding land, including the study area gradually slope to the east towards the Mulwaree River, which is located approximately 800 m at its closest point. Site elevation is approximately 640 m Australian Height Datum (m AHD). Cavvanba (2021) report the railway sidings and lines are approximately 3-4 m lower than the western site boundary. A high point is located to the west, approximately 30 m higher than the site (**Figure 2**, **Appendix 1**).
Visible Signs of Contamination	No visible signs of contamination such as discolouration or staining were observed on the surface.
Visible Signs of Plant Stress	During the site inspection no signs of grass stress were noted study area.
Presence of Drums, Wastes and Fill	No drums, waste or stockpiles were present within the study area during the site inspection.
Odours and Dust	No odours were noted within the study area during the site inspection.
Condition of Buildings and Structures	No inspection of the buildings along the road reserve was undertaken.
Flood Potential	Flood potential is possible based on the elevation of the site and study area, and proximity to the Mulwaree River. An escarpment on the western boundary of the site limits flooding to the west towards Sloane Street.
Preferential Water Courses	One open drain was observed in the southeast corner of Ottiwell Street (east) and an ephemeral creek was observed at the southern end of Sloane Street, with a culvert under the road. The open drain is positioned down gradient from the site and likely receives surface water runoff and stormwater from the site. The tributary is located upgradient of the site and flows southeast through the site and connects to Mulwaree River.
Local Sensitive Environment	The nearest local sensitive environment is the Mulwaree River, located approximately 700 m to the south-east of the site boundary. The nearest local sensitive human health receptor is Goulburn Recreation Area, located approximately 300 m to the east of the site. Residential properties are present on the western side of Sloane Street, Ottiwell Steet (west) and Lansdowne Street west of the site, and on King Street, Ottiwell Street (east) and Cooma Avenue east of the site.
Potential Offsite Contamination Sources for the Study Area	The majority of the land surrounding the study area is occupied by residential properties, particularly within the northern and central portions. A former livestock saleyard is located on the corner of Sloane Street and Finlay Road, and is currently under redevelopment. In the southwest of the study area, light industrial/warehousing is underdevelopment. An operational fuel depot, is located within the southern portion of the Wheat Yards (but not part of the site) and further to the east of the Goulburn Railway workshops and Goulburn Roundhouse.

6. Integrity Assessment

The following documents and publicly available information were used to complete the study area review detailed in the sections above:

- Previous reports prepared for the site (listed in **Section 3**)
- NSW NSW Department of Planning, Industry and Environment eSPADE soil profile and soil map information
- Google Earth Pro
- Nearmap Imagery
- NSW Government SixMaps
- Site inspection

The historical review as part of this investigation has been limited due to the extensive investigations already conducted previously for the site and the objectives to assess the potential for the presence and extent of offsite lead contamination and migration (if any) surrounding the site. Ramboll acknowledges that numerous previous investigations have been conducted on the site, and consider these to have been adequately reviewed and taken into consideration as part of the PSI and are also summarised in **Section 3**.

All regulatory information reviewed has been sourced from third parties, however it is assumed that the information is accurate and correct.

7. Preliminary Conceptual Site Model

A conceptual site model (CSM) is a site-specific qualitative description of the source(s) of contamination, the pathway(s) by which contaminants may migrate through the environmental media, and the populations (human or ecological) that may potentially be exposed. This relationship is commonly known as a source-pathway-receptor (SPR) linkage.

The preliminary CSM presented for the study area below is predominantly based on the CSM Cavvanba (2022a) developed as part of their DSI for the site. The Cavvanba (2022a) CSM identified contamination sources (actual and potential), pathways and receptors, and those relevant to this offsite lead delineation investigation are presented below. Ramboll notes that other contaminants of potential concern (CoPCs) have been identified for the Wheat Yards site, including OCP, OPP, PCB, heavy metals (Cd, CrVI, Ni, Zn, Hg), phenols, TRH, BTEXN, PAH, asbestos and PFAS, but these have not been considered in this investigation. Consideration of a wider CoPC/analyte list and more comprehensive study area (including watercourses) will be assessed subject to the results of this initial preliminary offsite assessment and completion of the onsite investigation.

7.1 Contaminants of Concern

Contaminants of concern (CoC) include lead, and co-located arsenic, copper and zinc.

7.2 Potential Contaminant Sources

The primary potential source of lead, and co-located arsenic, copper and zinc, contamination for the study area includes the migration of the metal ore concentrate contaminants (historically deposited in the area (Cavvanba, 2022a)) from the Wheat Yards site via runoff, relocation or dust migration.

Potential secondary sources of lead, and co-located arsenic, copper and zinc, contamination for the study area include:

- Uncontrolled fill material along the road reserves of the study area.
- Historical use of lead-based paint from aged houses along the study area.
- Historical use of lead-based fuels that have deposited along the road reserve of the study area.

7.3 Potentially Affected Environmental Media

Potentially affected environmental media include soil and surface water. Surface water was not assessed as part of this investigation. The potential for lead and co-located arsenic, copper and zinc impacts to surface water would be based on the soil results. Indoor and ambient air has been assessed separately.

7.4 Potential Receptors

Identified potential offsite receptors include:

- Offsite residential occupants.
- Offsite excavation/intrusive maintenance workers.
- Offsite occupants and visitors in a commercial/industrial and rural primary production land use setting.
- Offsite terrestrial ecological receptors, such as soil processes, plants and organisms that may inhabit or directly contact soil.
- Recreational users.
- Flora/fauna of Mulwaree River.

7.5 Exposure Pathways

Possible exposure pathways for lead and co-located arsenic, copper and zinc impacted soil identified by Cavvanba (2022a) and updated to include:

- Direct ingestion or dermal contact with impacted soil.
- Inhalation of dust.
- Migration/transport of soil from the site via site runoff, relocation or dust migration.
- Exposure to contaminated soil via plant root uptake.
- Mixing, erosion and suspension of soil and contaminants in runoff.
- Offsite migration of contaminants via surface water such as stormwater.

7.6 Preliminary CSM and Exposure Pathways

An assessment of the potential SPRs for the offsite receptors identified above is presented in **Table 7-1**.

Table 7-1: Potential Offsite Contamination Exposure Pathway Assessment

Pathway	SPR Link? (Yes (Y) / No (N) / Potential (P))						
	Human Receptors				Ecological Receptors		
	Offsite workers (non-intrusive)	Offsite intrusive maintenance workers	Offsite residents, including adults and children	Offsite recreational users, including adults and children	Offsite terrestrial ecology	Flora and fauna of Mulwaree River	Justification
Dermal contact, ingestion and/or dust inhalation	P	P	P	P	-	-	Elevated lead concentrations have been identified widespread across most of the Wheat Yards site at levels that are a risk to site users. Elevated arsenic, copper and zinc concentrations were also identified widespread across most of the Wheat Yards site co-located the lead contamination at levels that potentially present a risk to ecolocial receptors onsite. However, the potential for the lead, and co-located arncie, copper and zinc, contamination to have migrated offsite and present an unacceptable risk to human health and/or the environment is unknown. Notably, the risk to flora and fauna receptors of Mulwaree River is considered low based on the distance from the site to the river (approximately 700 m at its nearest point downslope to the east).
Plant root uptake	-	-	-	-	P	P	
Surface water runoff (including movement of soil/sediment via runoff	P	P	P	P	P	P	
Movement of soil via relocation, disposal or dust migration	P	P	P	P	P	P	

8. Sampling and Analysis Quality Plan

Prior to the investigation, Ramboll prepared the following SAQP:

- ‘Goulburn Wheat Yards Assessment, Offsite Lead Delineation Sampling and Analysis Quality Plan’, June 2023 (Ramboll, 2023).

A summary of the SAQP is provided below.

8.1 Data Quality Objectives

Ramboll developed Data Quality Objectives (DQOs) using the US EPA seven-step DQO process, endorsed in Schedule B2 of NEPM (2013). The DQOs set quality assurance and quality control parameters for the field and laboratory program to ensure data of appropriate reliability has been used to assess the potential for the presence and extent of lead, and co-located arsenic, copper and zinc, impacts and migration offsite (if any) surrounding the site. The DQOs for the investigation are outlined in **Table 8-1,** and note that the study area was defined by ARTC in the request for quotation provided on 18 November 2022. Further investigation may be required for a wider list of analytes/CoPCs and offsite delineation (such as sampling in waterways) subject to the results of this investigation.

Table 8-1: Data Quality Objectives

DQO	Outcome
State the Problem	Several previous investigations at the site (**Section 3**) have identified an unacceptable risk to human health and the environment from elevated lead concentrations in surface soil and shallow fill. Where lead exceedances were reported, elevated arsenic, copper and/or zinc concentrations were also located, indicating that the source of contamination may be associated with the metal ore concentrate historically deposited in the area, historical railway use and historical agricultural activities. Offsite movement of contamination through dust, and other erosion processes is plausible (Cavvanba, 2022a), however the scale and magnitude of dust generation, mobilisation and deposition is unknown.
Identify the Decision	1. Is the data collected of sufficient quality to identify impacts to meet the project objective? 2. What is the extent of lead impacts in surface soil offsite? 3. Are there potential risks to human health or the environment offsite and is further assessment and/or management of those risks required?
Identify Inputs to the Decision	1. Historical lead (and co-located arsenic, copper and zinc) soil data from previous investigations completed within the Wheat Yards site (**Figure 2**, **Appendix 1**). 2. Additional analyses of soils by fpXRF and laboratory analysis of soils for lead for correlation to fpXRF samples in the study area. 3. Analyse the data and compare to the assessment criteria outlined in **Section 11.** 4. Develop the offsite CSM and identify risks to offsite receptors.
Define the Study Boundaries	Site boundaries are shown in **Figure 2**, **Appendix 1**. The spatial boundaries for the PSI (comprising the offsite delineation assessment) are shown on **Figure 2** and **Figures 4a** to **4e**, **Appendix 1**, and are considered to include the following: 1. Along both sides of Sloane Street (approximately 1,500 m). 2. Along both sides of Ottiwell Street (west) (approximately 200 m). 3. Approximately 100 m down Lansdowne Street, along both sides, if required to delineate lead impacts. 4. Approximately 100 m down the unnamed road between Lansdowne Street and Finlay Road, along both sides, if required to delineate lead impacts. 5. Approximately 100 m down Dossie Street, along both sides, if required to delineate lead impacts. 6. Approximately 100 m down Finlay Road, along both sides, if required to delineate lead impacts.

DQO	Outcome
	7. Along both sides of Ottiwell Street (east) (approximately 130 m), if required to delineate lead impacts. 8. Along both sides of King Street (approximately 85 m), if required to delineate lead impacts. 9. Along both sides of Cooma Avenue (approximately 150 m), if required to delineate lead impacts. The vertical boundary of the investigation is limited to surface soils. The temporal boundary is limited to the data collected during this offsite investigation and review of historical site data.
Develop a Decision Rule	The statistical parameter of interest is lead, and co-located arsenic, copper and/or zinc concentrations identified as CoCs. The action levels are the assessment criteria outlined in **Section 11**. The decision rules for this investigation are as follows: 1. If it is determined that the data generated through this investigation is reliable, complete, comparable, accurate and representative then this information will be used to address the assessment objectives. 2. If it is determined that the data generated through this investigation is not suitable, comprehensive or reliable for use in achieving the goals of the study, then further investigations may be recommended to reduce uncertainties. 3. If it is determined that insufficient information is available to make conclusions on the risk to human health and/or ecological receptors, then further information may be required. 4. If the CoCs are reported above the assessment criteria it will be considered whether further assessment or management measures are required. To meet these decision rules, the types of data quality required, appropriate fpXRF and soil sampling field methods (including sampling procedure and preservation of samples) and the quality of analytical data undertaken by the commercial laboratories are summarised in the following: 1. Works to be completed in general accordance with US EPA 2007, *Method 6200, Field Portable X-Ray Fluorescence Spectrometry for the Determination of Elemental Concentrations in Soil and Sediment* (US EPA Method 6200 (2007)). 2. All sample analyses are to be conducted using National Association of Testing Authorities (NATA) registered methods in accordance with NEPM (2013). 3. All samples are to be extracted within the laboratory specified acceptable sample holding time. 4. Samples are to be appropriately preserved and handled in accordance with the sampling methodology outlined in **Section 9.1**. 5. Limits of reporting (LOR) are to be less than the assessment criteria. 6. Duplicates, spikes, blanks, and control samples are to meet the data quality indicators (DQIs) and performance criteria presented below.
Specify Limits on Decision Errors	The acceptable limit of decision error is 5% probability of a false negative (i.e., assessing that the average concentrations of CoC are less than the assessment criteria when they are not). The tolerable limits on decision errors are as follows: 1. Probability that 95% of data will satisfy the DQIs, therefore a limit on decision error will be 5% that a conclusive statement may be incorrect. 2. Comparing individual concentrations against the relevant assessment criteria and if discrete samples are in excess of the assessment criteria then: 3. Comparing the 95% upper confidence limit of mean against the assessment criteria also ensuring that: a) The standard deviation of the results is less than 50% of the relevant assessment criteria, and b) No single value exceeds 250% of the relevant assessment criteria. c) Specific contaminant of concern (e.g. response to carcinogens may be more conservative). 4. The area of site in question and the potential lateral and vertical extent of questionable information. 5. Whether the uncertainty can be effectively managed by site management controls or plans. The potential for significant decision errors will be minimised by: 1. Assessment of quality assurance/ quality control (QA/QC) of the investigation data to determine if the data satisfies the DQIs. 2. Assessment of whether appropriate sampling and analytical densities were completed for the purposes of the investigation.

DQO	Outcome
	3. Ensuring that the criteria set for the investigation were appropriate for the offsite land use.
Optimise the Design for Obtaining Data	The overall sampling design of the offsite lead investigation considered the potential for offsite migration of contaminants from the site via runoff, relocation, or dust migration. A non-destructive sampling technique for publicly accessible land was adopted to target surface soils and reduce impacts from other sampling methods (i.e., test pitting). The sampling methodology is outlined in **Section 9.1**.

8.2 Data Quality Indicators

DQIs and performance criteria for fpXRF measurements of lead in soil have been established to set acceptance limits on field and laboratory data collected as part of the soil sampling program. The DQIs are outlined in **Table 8-2**.

Table 8-2: Data Quality Indicators

DQI	Field	Laboratory
Completeness – a measure of the amount of useable data from a data collection activity	All locations sampled as shown in **Figures 4a** to **4e**, **Appendix 1**. Experienced sampler and field personnel. Field documentation completed thoroughly and correctly.	All critical samples analysed. All analysis completed according to standard operating procedures. Appropriate methods Appropriate practical quantitation limits (PQLs).
Comparability – the confidence that data may be considered equivalent for each sampling and analytical event	Experienced sampler. Climatic conditions noted during sampling. Same types of samples collected using approved sampling methods from same sampling depths (i.e.: 0-0.05 mbgl). Analytical samples collected for submission to the laboratory to establish a correlation between fpXRF and laboratory results. Photographs taken of sampling location conditions at the time of sampling.	Same analytical methods used. Same sample PQLs. Same NATA accredited laboratories used. Same units. As stated in US EPA Method 6200 (2007), to increase accuracy of the results, complete digestion of soil samples is valuable to ensure accurate correlation. Ideally, Method 3052 should be adopted however, this method is not available at the NATA accredited laboratories considered for this project and Method 3040 will be used.
Representativeness – the confidence that data are representative of each medium present onsite.	Appropriate media sampled. Non-disposable sampling equipment, such as the hand trowel was used and thoroughly decontaminated between locations using Decon®90 solution and rinsate water. At each location, a pair of disposable nitrile gloves were worn while sampling; gloves were replaced between each successive sample. Soil analytical samples will be collected directly into the sampling jars clearly labelled with a unique sample name, date and location.	All samples analysed according to standard operating procedures.

DQI	Field	Laboratory
Precision – a quantitative measure of the variability of the data.	Collection of intra-laboratory duplicates at a rate of 1 in 10 primary samples. Collection of inter-laboratory duplicate samples at a rate of 1 in 20 primary samples. Ramboll used a Niton™ XL3 Analyser Thermo Fisher Scientific – Portable Handheld XRF. Model ID: XL3t 950. Details are provided on the calibration documentation in **Appendix 8**. A NSW EPA licence holder for fpXRF testing completed the work (**Appendix 9**).	Analysis of field duplicate samples, relative percent difference (RPDs) to be $\leq$30%. Laboratory duplicates analysed, RPDs to be $\leq$ 30%. The correlation coefficient (R) for field XRF and laboratory samples should be above 0.7 (US EPA Method 6200 (2007)).
Accuracy – a quantitative measure of the closeness of the reported data to the "true" value.	Sampling methodologies appropriate and complied with. Collection of one rinsate sample each day of sampling where reusable equipment was used. Works to be completed in accordance with US EPA Method 6200 (2007), including: • daily system checks and internal calibration. • measurement of blank reference material (silicon dioxide) (at the start of every day and repeated every ten samples). • certified reference materials measured to check instrument response and calibration (every 20 samples). • adopting a dwell time appropriate for measurement of CoC (20 seconds is considered sufficient accuracy for the sampling program).	Analysis of: Method blanks Matrix spikes Surrogate spikes Laboratory control samples Results for blank samples to be non-detect. Results for spike samples to be between 70% and 130%.

9. Fieldwork Methodology

9.1 Sampling Plan and Methodology

To assess potential offsite migration of metal impacts, a systematic sampling program was undertaken and is outlined in **Table 9-1**, and shown on **Figures 4a** to **4e**, **Appendix 1**. Primary soil measurements were collected using fpXRF, with 9.6% of soil fpXRF samples laboratory analysed for metals to establish a correlation. Laboratory samples were chosen based on fpXRF concentrations measured in the field to provide suitable coverage of the total concentration distribution range.

Table 9-1: Sampling Program

Location	Sampling	No. of fpXRF samples proposed	No. of fpXRF samples collected	No. of laboratory QC samples proposed	No. of laboratory QC samples collected	CoCs
Both sides of Sloane Street (approximately 1,500 m long)	Surface soil sampling (top 0.1 mbgl) approximately every 20 linear metres (or as required to delineate lead impacts)	150	144*	25	22	Lead and co-located arsenic, copper and zinc
Both sides of Ottiwell Stret (west) for approximately 200 m		20	20			
Both sides of Lansdowne Street for approximately 100 m		10	10			
Both sides of the unnamed road between Lansdowne Street and Finlay Road for approximately 100 m		10	7**			
Both sides of Dossie Street for approximately 100 m		10	0***			
Both sides of Finlay Road for approximately 100 m		10	10			
Both sides of Ottiwell Street (east) for approximately 130 m		13	15			
Both sides of King Street for approximately 85 m (if required)		8	9			
Both sides of Cooma Avenue for approximately		15	15			

Location	Sampling	No. of fpXRF samples proposed	No. of fpXRF samples collected	No. of laboratory QC samples proposed	No. of laboratory QC samples collected	CoCs
150 m (if required)						
Total sample of numbers		**246**	**230**	**25 (10%)**	**22 (9.6%)**	

*153 locations were attempted; however fpXRF samples XS211-XS219 were not able to be collected from Sloane Street as the road reserve was covered in concrete.

**10 locations were attempted; however 3 samples were not collected from the Unnamed Road as it was for private access only and was fenced off from the public.

*** No fpXRF samples were collected from Dossie Street as the as the road reserve was covered in concrete.

One open drain was observed in the southeast corner of Ottiwell Street (east) and an ephemeral tributary was observed at the southern end of Sloane Street with a culvert under the road (**Figure 4a-4e**, **Appendix 1**). The open drain is positioned down gradient from the site and likely receives surface water runoff and stormwater from the site. Photographs of the drains and tributary culvert under Sloane Street are shown in **Photos 31** to **34**, **Appendix 2**. One sample of sediment within the open drain on Ottiwell Street (east) was analysed (DS01). The tributary is located upgradient of the site and flows southeast through the site and connects to Mulwaree River. The tributary was sampled by Parsons Brinkerhoff in 2011 and reported lead concentrations of 1 µg/L and 2 µg/L.

9.2 Laboratory Analysis

All soil samples were appropriately preserved (e.g. kept chilled/on ice in insulated coolers) and submitted to a NATA accredited analytical laboratory, under chain of custody protocol. The soil samples were collected approximately one in every 10 fpXRF samples for the following laboratory analytical program as outlined in **Table 9-2**.

Table 9-2: Laboratory Analytical Program

Media	Number of Samples	Analytical Program
Soil	22	Lead and co-located arsenic, copper and zinc
QA/QC		
Intra-laboratory duplicate	2 (1/10 samples)	Lead and co-located arsenic, copper and zinc
Inter-laboratory duplicate	2 (1/10 samples)	
Rinsate	2 (1 per day where reusable equipment was utilised)	
Trip blank	0 – no volatiles were analysed as part of this investigation and was not considered relevant	

9.2.1 Laboratory Methodology

Laboratory analysis was conducted by NATA accredited laboratories. The laboratory LOR reference methods applied for metals is detailed below in **Table 9-3**.

Table 9-3 Laboratory Analytical Methods

Analyte	LOR	Reference Method
Soil		
Metals	0.1 - 5 mg/kg	APHA 3120; USEPA SW 846 - 6010/AS 3550, APHA 3112 Hg - B / Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS
Water		
Metals	0.001 – 0.005 mg/L	Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

10. Quality Assurance / Quality Control

The fieldwork program was carried out in general accordance with the DQOs and DQIs outlined in **Section 8**. The fieldwork program was also completed in general accordance with NSW EPA (2020) *Sampling Design Part 1 – application*.

The following quality assurance/quality control (QA/QC) procedures were employed during the investigation:

- All samples were collected by personnel trained and experienced in using an fpXRF, applying standard industry techniques for sample collection.
- A new pair of disposable nitrile gloves were used at each sampling location.
- All samples were promptly placed in clean, laboratory-supplied glass jars for analysis.
- All samples were labelled with unique names, identifying location and date.
- All samples were immediately placed in chilled coolers.
- All samples were sent to the laboratory under chain-of custody protocols.
- All samples were analysed within the recommended holding times.
- Reusable sampling equipment was decontaminated by washing Decon90 and rinsate water between samples.
- The fpXRF was calibrated by the technical rental company and checked daily after every ten samples. Certified reference materials and blanks provided by the rental company were measured to check instrument response and calibration and recorded in the in the machine (presented in the raw output in **Appendix 3**).

An experienced environmental scientist holding a NSW EPA licence under the *Radiation Control Act 1990,* required for fpXRF testing, operated the fpXRF, using the following methodology:

- XRF readings were collected from soil in-situ and measurements were taken by placing the fpXRF directly on the ground surface.
- The soil surface to be measured was cleared of debris and grass prior to taking the measurement to ensure that there was no obstruction, that the analyser window was protected and that contact with the sample surface was maintained during measurements.
- Visually dry surfaces were chosen for measurement, as moisture is known to affect measured concentrations.
- Soil sampling for confirmatory laboratory analyses occurred at a frequency of 9.6% fpXRF samples, covering the observed distribution of concentrations.

The following quality control samples were also collected and submitted for analysis:

- Laboratory soil samples were collected every ten fpXRF readings and submitted for arsenic, lead, copper and zinc.
- Two intra-laboratory duplicates and two inter-laboratory duplicates were submitted for analysis at a rate of 10%.
- No trip blank was required as the contaminant of concern was not volatile, i.e. metal analysis.

An assessment was made of data completeness, comparability, representativeness, precision and accuracy based on field and laboratory considerations, as outlined in NEPM (2013) guidelines. The QA/QC data evaluation is presented in **Table 10-1**. Overall, it is considered that the completed investigation works, and the data obtained adequately complied with the requirements of NEPM (2013) guidelines. It is considered that the data are of suitable quality to meet the project objectives.

Table 10-1: QA / QC –Assessment of DQIs

Assessment of DQIs (as per NSW EPA, 2020)	Ramboll's Assessment	Completeness	Comparability	Representativeness	Precision	Accuracy
Field QA / QC						
Details of sampling team	The field investigation was completed by two experienced environmental scientists on the 19-21 June 2023.	x	x			
Reference to sampling plan/method, including any deviations from SAQP	Sampling was undertaken in accordance with the proposed scope of works. The systematic sampling strategy was developed based on an evaluation of site historical information, the potential contaminant source and the objective of the investigation. fpXRF sampling was completed on systematic grid, approximately every 20 m along the identified study boundary area. The sampling plan was in accordance with the SAQP except for: - areas along Sloane Street and Dossie Street which were covered in concrete and could not be sampled - the end of the Unnamed Road which was fenced off from public access.	x				
fpXRF moisture correction	fpXRF measurements reported in parts per million (ppm) were corrected for the % moisture content reported in laboratory check samples to inform assessment of dry weight (mg/kg) contaminant concentrations. The moisture correction which was applied to fpXRF measurements is described by the following formula: Moisture corrected fpXRF = Uncorrected fpXRF/(100% – % moisture content) The average moisture content was applied to uncorrected fpXRF measurements however where laboratory check samples were collected, the specific moisture content reported in these samples was applied to the corresponding fpXRF data. Moisture corrected fpXRF measurements were assessed against the assessment criteria in **Section 11**.				x	x
fpXRF correlation	The comparability of fpXRF samples was assessed through correlation of fpXRF results against laboratory results for copper, lead and zinc (arsenic results were all less than the limit of detection (<LOD) and not determined). Comparability refers to the confidence with which one data set can be compared to another and can be used to verify the quality of the fpXRF data. The correlation coefficient (R) was determined using the CORREL function in excel and the correlation of determination (r^2) was conducted by using linear regression analysis. The (R) and (R^2) are presented in **Appendix 4** and summarised below: - Pb: R = 0.95; R^2 = 0.93 - Cu: R = 0.33; R^2 = 0.28				x	x

Assessment of DQIs (as per NSW EPA, 2020)	Ramboll's Assessment	Completeness	Comparability	Representativeness	Precision	Accuracy
	- Zn: R = 0.90; R^2 = 0.85 Copper does not meet the correlation coefficient (R) quality control value of 0.7. This is not considered to be a concern as the concentrations reported are generally below the site assessment criteria and copper is a co-located contaminant and not the driver for contamination (i.e. lead). Further the slope of the copper regression line indicates that the fpXRF is under-reporting the copper data compared to the laboratory analysis, compared to the slopes of the lead and zinc regression lines, which indicates the data would need to be corrected very little to match the confirmatory laboratory data.					
fpXRF blank samples	Measurement of blank reference material (silicon dioxide, SiO_2) was completed every ten samples. This ensured that cross-contamination of samples was not occurring. No element concentrations above the established lower LOD should be found in the instrument blank. Twenty-two method blanks were collected at a rate of 9.6%, and all samples reported <LOD for arsenic, copper and lead. Fifteen soil samples reported zinc concentrations above the LOD. This is not considered to be a concern as the zinc concentrations reported in the method blanks were below 10 ppm except for one sample (14.14 ppm). This is considered relatively low when compared against the site assessment criteria. The results are presented in **Table 4**, **Appendix 5**.				x	x
Calibration verification checks	A calibration verification check sample is used to check the accuracy of the instrument and to assess the stability and consistency of the analysis for the analytes of interest. A calibration check was undertaken every 10 samples. The standard samples (prefix RCRA) readings were arsenic and lead (500 ppm), copper (20 ppm), and zinc (50 ppm). The measured value for each target analyte should be within ±20 percent (%D) of the true value for the calibration verification check to be acceptable. Twenty-two calibration verification checks were completed at a rate of 9.6%, and the following reported >±20%D: - RCRA_02 – arsenic (63.4%) and lead (65.6%) - RCRA_03 - arsenic (25.0%) and lead (29.3%) - RCRA_11 – copper (21.4%) - RCRA_12 – copper (20.7%) - RCRA_16 – nickel (20.8%) - RCRA_21 – copper (31.2%) The results are presented in **Table 4**, **Appendix 5**. The verification discrepancies are not considered to be a concern as they are mostly only marginally above the acceptance criteria of 20%, except for arsenic and lead in					x

Assessment of DQIs (as per NSW EPA, 2020)	Ramboll's Assessment	Completeness	Comparability	Representativeness	Precision	Accuracy
	RCRA_02, and all arsenic and lead concentrations were reported well below the adopted site assessment criteria.					
Any information that could be required to evaluate measurement uncertainty for subsequent testing.	230 fpXRF soil samples were collected and 22 laboratory samples were submitted which is at a rate of 9.6% for quality assurance and quality control purposes. Soil samples were collected over a range of fpXRF lead to provide suitable coverage of the total concentration distribution range.				x	x
Decontamination procedures carried out between sampling events	Soil samples were collected using a hand trowel which was decontaminated with Decon90 and rinsate water between sample locations. Samples were collected using a new pair of nitrile gloves that were replaced between samples.			x	x	x
Logs for each sample collected, sampler, duplicate samples.	Soil sampling was completed in general accordance with AS 4482-2005 Guide to the investigation and sampling of sites with potentially contaminated soil Part 1 - Non-volatile and Semi-Volatile Compounds and Part 2 – Volatile Compounds (Standards Australia 2005). Soil sample descriptions are presented in **Appendix 6**. Two intra-laboratory duplicates and two inter-laboratory duplicates were submitted for analysis at a rate of 10% (22 primary lab samples).		x	x		
Chain of custody fully identifying – for each sample – collection date, analyses to be performed, sample preservation method.	Samples were transported to the laboratory under chain of custody conditions. The chain of custody forms was signed by the laboratory on receipt of the samples. All soil samples were placed into laboratory supplied glass jars. All samples were given a unique label. Laboratory reports are presented in **Appendix 7**.	x	x			
Field quality assurance/quality control results (e.g. field blank, rinsate blank, trip blank, laboratory prepared trip spike)	Two rinsate blanks (Rinsate_20/6/23 and Rinsate_21/6/23) were collected on the 20 and 21 June 2023 in accordance with the SAQP. The results are presented in **Table 3**, **Appendix 5**. Rinsate_20/6/23 reported detectable concentrations in copper, lead and zinc and Rinsate_21/6/23 reported detectable concentrations in lead and zinc. The hand trowel was rinsed with Decon90 and rinsate water supplied by the laboratory. The detectable concentrations may be a result of using a plastic hand trowel rather than a stainless-steel hand trowel, however, the detectable concentrations in the rinsate samples are not considered to have impacted the results as the fpXRF samples correlated with the laboratory data and most of the samples reported low concentrations of metals during the investigation.				x	x
Sample splitting techniques – subsampling, containers/preservation	Sample results are presented in **Table 3**, **Appendix 5**.			x		

Assessment of DQIs (as per NSW EPA, 2020)	Ramboll's Assessment	Completeness	Comparability	Representativeness	Precision	Accuracy
(ensure unique ID for subsequent samples provided)	RPDs were all below the RPD criteria (<=30%) except for intra-laboratory duplicate pairs: - XS200/D001 arsenic (54%) - XS223/D002 copper (78.6%) and lead (31.6%). This was not considered to be a concern due to the low concentrations reported in the duplicate and primary samples, relative to the site assessment criteria, and the correlation to the fpXRF readings					
Statement of frequency	Laboratory soil samples were collected at a rate of 9.6% of fpXRF samples. Soil samples were collected and sent to a laboratory for analysis to determine the correlation coefficient between the XRF and laboratory measurements. Inter-laboratory and intra-laboratory soil samples were collected at a rate of 10%.			x	x	
Background sample results	No background samples were collected as part of this investigation.	x	x			
Field instrument calibrations	The fpXRF was hired from a rental company who calibrated the equipment prior to hire. Measurement of blank reference material (silicon dioxide) was completed at the start of every day and repeated every ten samples. Calibration certificates and are included in **Appendix 8**.				x	x
Sampling devices and equipment	The use of fpXRF was completed in accordance with US EPA Method 6200 (2007), including: - daily system checks and internal calibration. - measurement of blank reference material (silicon dioxide) (at the start of every day and repeated every 10 samples). - certified reference materials measured to check instrument response and calibration (every 20 samples). - adopting a dwell time appropriate for measurement of CoC (20 seconds is considered sufficient accuracy for the sampling program). The field sheets are included as **Appendix 6**. The raw fpXRF readings are provided as **Appendix 3**.	x	x			
Laboratory QA/QC						
A copy of signed chain-of-custody forms acknowledging receipt date, time and temperature and identity of samples included in shipments	Copy of the signed chain of custody forms are provided in **Appendix 7**.	x	x			

Assessment of DQIs (as per NSW EPA, 2020)	Ramboll's Assessment	Completeness	Comparability	Representativeness	Precision	Accuracy
Record of holding times and a comparison with method specifications	Review of the chain of custody forms and laboratory certificates indicated that holding times were met.	x	x			
Analytical methods used, including any deviations	Summary analytical methods were included in the laboratory test certificates as shown in **Appendix 7**.	x	x			
Laboratory accreditation for analytical methods used, also noting any methods used which are not covered by accreditation	Eurofins was used as the primary laboratory. ALS was used as the secondary laboratory. The laboratory certificates are NATA stamped.	x			x	
A list of what spikes and surrogates were run with their recoveries and acceptance criteria	The results for laboratory surrogates and matrix spikes were acceptable.		x			x
Laboratory LOR	The LORs were below the assessment criteria.	x	x			
Reference laboratory control sample and check results	The results for laboratory control samples were acceptable and no detections were made in the method blank samples.	x				
Laboratory frequencies	Laboratory quality control samples including duplicates, surrogate spikes and blanks were undertaken by the laboratories at appropriate frequencies.	x				x
Laboratory results	The results for laboratory duplicates were acceptable and no detections were made except for copper in laboratory sample N23-Jn0060229. However, the RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of their report.	x				x

11. Assessment Criteria

The criteria adopted for the assessment of offsite soil contamination were sourced from the following references:

- National Environment Protection Council (NEPC), National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013 (NEPC, 2013).

The NEPM (2013) provides HILs and EILs for various land uses. The NEPM (2013) also introduced HSLs and ESLs, management limits and direct contact HSLs for petroleum hydrocarbons, which are not relevant for this investigation.

The assessment criteria to be adopted for the offsite delineation investigation based on sample collection within road verges is as follows:
- HIL C – Health investigation level for recreational/open space such as parks, playgrounds, playing fields, secondary schools and footpaths.
- EIL for urban recreational and public open space – ecological investigations levels applicable for assessing risk to terrestrial ecosystems.

The HILs are applicable for assessing human health risk via all relevant pathways of exposure. The HILs are generic to all soil types and apply generally to a depth of 3 mbgl. EILs depend on specific soil physicochemical properties and generally apply to the top 2 m of soil.

EILs depend on specific soil physio-chemical properties such as pH, clay content, cation exchange capacity (CEC) and background concentrations. The published range of the added contaminant limits (ACL) are listed in **Table 11-1** as an initial screen.

The soil assessment criteria for the metals of concern (lead and co-located arsenic, copper and zinc) are summarised in **Table 11-1**.

Table 11-1: Soil Assessment Criteria (mg/kg)

Contaminant	HIL C	EIL (Urban residential / public open space)
Arsenic	300	100
Copper	17,000	95
Lead	600	1,100
Zinc	30,000	70

Copper and Zinc EILs based on ACLs with a CEC of 5 cmol/kg

12. Results

12.1 Site Lithology

The soil surface was generally described as gravelly, silty sand, silty sand or gravelly silt. Soil descriptions are included in the field sheets provided as **Appendix 6**.

12.2 Soil Results

fpXRF samples were collected from 230 locations, approximately every 20 m along the road reserve of the study area. All fpXRF samples were recorded for arsenic, copper, lead and zinc.

Readings were recorded digitally on the fpXRF unit and are reported as a wet weight in parts per million (ppm or mg/kg) and are not directly comparable with the dry weight guideline concentration. Twenty-two soil samples were collected and sent to a laboratory for analysis to determine the correlation coefficient between the fpXRF and laboratory measurements. The metals results were corrected based on the moisture content in the soil (as outlined in **Table 10-1**). The average moisture content was used to correct the data for moisture in absence of laboratory specific data. The corrected data was compared against the adopted assessment criteria.

The results are presented in **Table 1**, **Appendix 5** and copies of the laboratory reports are presented in **Appendix 7**. The soil results for the field investigation are summarised in **Table 12-1**.

Table 12-1: Summary of Soil Exceedances

Metals[1]	n[2]	non-detects	HIL C	EIL	Min	Max	SD	Mean	No > HIL C	No > EIL
Arsenic	230	202	300	100	4.7	52.6	10.5	15.9	0	0
Copper	230	180	17,000	95	18.4	405.0	57.0	55.8	0	**5 (1)**
Lead	230	127	600	1,100	9.9	148.6	31.3	41.9	0	0
Zinc	230	80	30,000	70	21.5	959.0	117.9	133.3	0	**100 ()**

[1] All results have been corrected for moisture content and are presented in mg/kg.
[2] n=number of samples. Where laboratory duplicate samples were collected, the highest of the fpXRF sample and the laboratory sample was used and compared against the assessment criteria.
URPOS = urban residential and public open space
Results in () indicate number of samples that were >2.5 times the adopted assessment criteria.

12.2.1 Indicative Worst Case Metal Concentrations

As a conservative estimate, indicative 'worst case' heavy metal concentration estimates were calculated using the fpXRF error values, which refers to the amount of error associated with the individual result for that analyte. The results are presented in **Table 2**, **Appendix 5** and summarised in **Table 12-2**.

Review of the errors indicated potential outliers in the dataset, so the data was subjected to an outlier test in ProUCL[1] which identified the arsenic error for sample XS176 (70,646 mg/kg) and the errors for copper (14,728 mg/kg), lead (1439 mg/kg) and zinc (19,964 mg/kg) for sample

[1] USEPA. ProUCL: Statistical Software for Environmental Applications for Data Sets with and without Non-detect Observations. Version 5.2. https://www.epa.gov/land-research/proucl-software, 2022

XS146 to be outliers. As a result, these errors were removed from the dataset presented in **Table 12-2**. ProUCL statistical analysis outputs are provided as **Appendix 10**.

Table 12-2: Summary of Worst Case Soil Exceedances

Metals[1]	n[2]	non-detects	HIL C	EIL	Min	Max	SD	Mean	No > HIL C	No > EIL
Arsenic	229	0	300	100	2.95	618.6	40.8	17.3	**1**	**1 (1)**
Copper	229	0	17,000	95	12.2	2837	190.8	87.5	0	**52 (11)**
Lead	229	0	600	1,100	3.6	747.2	56.2	35.7	**1**	0
Zinc	229	0	30,000	70	21.4	3634	257.1	134.5	0	**134 (47)**

[1] All results have been corrected for moisture content and are presented in mg/kg.

[2] n=number of samples. Excludes outliers.

Results in () indicate number of samples that were >2.5 times the adopted assessment criteria.

Where arsenic and lead worst case concentrations were reported above the HIL for public open space (HIL C), the data was again subjected to statistical analysis in ProUCL to calculate the 95% upper confidence limit (UCL) of the arithmetic mean contaminant concentration. The 95% UCL of the arithmetic mean provides a 95% confidence level that the true population mean will be less than, or equal to, this value. In addition, the 95% UCL and the mean contaminant concentration should be below the assessment criteria and the standard deviation should be less than 50% of the assessment criteria. The 95% UCL values for arsenic (29.09 mg/kg) and lead (51.9 mg/kg) were both calculated below their respective HILs, indicating there is no risk to human receptors in the study area.

12.3 Discussion of Results

No reported arsenic or lead concentrations exceeded the adopted HIL or EIL criteria (**Table 12-1**).

Five copper concentrations exceeded the adopted EIL for urban residential and public open space, of which one samples reported a concentration greater than 2.5 times above its criterion. Zinc concentrations exceeded the adopted EIL for urban residential and public open space in 100 samples, of which 34 samples reported concentrations greater than 2.5 times the EIL.

However, in the absence of site/study area-specific soil data on pH, clay content, cation exchange capacity and background concentrations, conservative EILs for copper and zinc were adopted as per Tables 1B(1) and 1B(2) of the NEPM (2013). Numerous exceedances of the adopted copper and zinc EILs occurred because of the application of the lowest published range of the ACLs as an initial screen due to the lack of region-specific soil physicochemical properties, but this does not necessarily mean that terrestrial ecosystems are at risk. The site inspection observed that the grass was in a generally good condition and bare patches are likely associated with foot traffic with the use of the area as a road reserve (see photographic log in **Appendix 2**).

Based on the relationship between elevated arsenic, copper, lead and zinc concentrations observed in previous investigations, such as Cavvanba (2022a), the absence of arsenic, and low levels of lead reported in these samples indicate that the copper and zinc exceedances (**Table 12-1**) are not the result of migration from the Wheat Yards site and likely a result of naturally occurring metals in the soil. It is also unlikely that the copper and zinc concentrations reported are at levels that may present a risk to terrestrial ecosystems flora and fauna in Mulwaree River, even when taking into account the indicative worst case concentrations. Sample locations with zinc and copper EIL exceedances are presented on **Figures 5a-5e**, **Appendix 1**, showing their widespread presence across the study area.

The NSW Sampling Design Guidelines (EPA, 2022) defines a hotspot as “a localised area where the level of contamination is noticeably greater than in surrounding areas”. Based on the widespread nature of the copper and zinc concentrations along the 2 km length of the study area, and the low arsenic and lead concentrations reported, these concentrations are considered likely to be indicative of natural background ranges for these metals in the study area or the importation of uncontrolled fill within the road reserves. The arithmetic mean for both copper and zinc datasets (**Table 12-1**) fall within the background copper and zinc concentration ranges (23 mg/kg to 135 mg/kg and 88 mg/kg to 534 mg/kg, respectively, for an old suburb with high traffic area[2]) as presented in Olszowy et al (1995), further indicating the metals concentrations reported in the study area are representative of background ranges for the region. Additional sampling to measure site-specific physicochemical soil properties could be undertaken to determine if the presence of these concentrations presents a risk to ecological receptors within the study area, however the vegetation and transient wildlife within the road reserve of the study area are considered to be of low ecological value and the elevated copper and zinc concentrations are not considered to be the result of migration of contamination from the site.

[2] Based on the age of the town and railway line (over 100 years), and that the study area is situated between main roads, highways and the rail line.

13. Conceptual Site Model

For a human or ecological receptor to be exposed to a chemical contaminant derived from a site, there should be an exposure pathway linking the source of contamination and the exposed population. An exposure pathway describes the course a chemical or physical agent takes from the source to the exposed individual and generally includes the following elements:

- A source and mechanism of chemical release.
- A retention or transport medium (or media where chemicals are transferred between media).
- A point of potential human contact with the contaminated media.
- An exposure route (e.g. ingestion, inhalation) at the point of exposure.

The preliminary CSM described in **Section 7** has been updated following the results of the current investigation and is described below.

13.1 Contaminant Sources

The 'contaminant source' is identified by comparison of observed CoC concentrations in the media of concern (soil) against the adopted assessment criteria (refer to **Section 10**). A potential 'source' is identified when the CoC concentration is reported to be present in the environmental media at the study area above the adopted assessment criteria based on human health and ecological protection.

A summary of the contamination detected on the study area included:

- Copper and zinc concentrations above EILs, likely due to naturally occurring heavy metals in the soil or imported fill material.

The potential contaminant source, and the primary objective of this investigation, migration of lead (and co-located arsenic, copper and zinc) contamination from the site via runoff, relocation or dust migration was identified to be not present within the study area.

13.2 Updated CSM and Exposure Pathways

The CSM for the study area was updated based on the findings of the soil investigation related to the offsite migration of lead contamination from the site. A detailed assessment of the SPR linkages is presented in **Table 13-1**.

13.3 Data Gaps

Identified data gaps include:

- The degree and extent of CoPCs associated with historical use of the Wheat Yards site including railyard use, agricultural use, former fuel depots and transformer yards have not been adequately assessed. Soil sampling was co-ordinated to address the potential for offsite migration of lead (and co-located arsenic, copper and zinc) contamination only. The driver to assess these other CoPCs will be based on the results of additional onsite investigation, which has not yet been completed.

Table 13-1 Exposure Pathways Assessment

	SPR Linkages? (Yes (Y) No (N) Potential (P))						
Exposure Route	Offsite workers (non-intrusive)	Offsite intrusive maintenance workers	Offsite residents, including adults and children	Offsite recreational users, including adults and children	Offsite terrestrial ecology	Flora and fauna of Mulwaree River	Details of identified risk
Migration of lead (and co-located arsenic, copper and zinc) contamination from the site via runoff, relocation or dust migration							
Dermal contact, incidental ingestion and/or dust inhalation	N	N	N	N	N	N	No risk identified - complete pathway not identified.
Plant root uptake	-	-	-	-	N	N	
Migration/transport of soil/sediment from the site via surface water runoff, relocation or dust migration	N	N	N	N	N	N	
Movement of soil/dust via relocation, disposal or dust migration.	N	N	N	N	N	N	
Copper and zinc concentrations above EILs, likely due to naturally occurring heavy metals in the soil or imported fill material of the study area							
Dermal contact, incidental ingestion and/or dust inhalation	N	N	N	N	N	N	Whilst the reported copper and zinc concentrations may present a risk to flora and fauna within the study area, the vegetation and transient wildlife present within the road verge study area are considered to be of low ecological value.
Plant root uptake	-	-	-	-	P	N	
Migration/transport of soil/sediment from the site via surface water runoff, relocation or dust migration	N	N	N	N	N	N	
Movement of soil/dust via relocation, disposal or dust migration.	N	N	N	N	N	N	

- Groundwater and surface water was not assessed as part of this investigation. Ramboll do not consider this warranted based on limited impacts to shallow soils. There is potential for contamination from other CoPCs onsite that have not yet been assessed to impact surface water and groundwater off-site.
  One open drain and one ephemeral tributary were observed during the site inspection to be leaving/entering the site. The sample of drain sediment analysed during this investigation reported low arsenic, copper, lead and zinc concentrations well below the adopted EILs. The tributary was sampled by Parsons Brinkerhoff in 2011, which reported lead concentrations of 1 µg/L and 2 µg/L. However, the tributary was sampled on the upgradient side of the site. It is considered that there is potential for metals and other CoPCs to be migrating from the site into the drain/tributary and connecting with Mulwaree River, however based on the metal concentrations measured within the offsite study area during this investigation, the potential for this to occur is considered to be low.

14. Conclusions and Recommendations

Ramboll was engaged by ARTC to undertake a preliminary investigation to provide a lead delineation assessment surrounding the Goulburn Wheat Yards site.

Previous investigations identified the Wheat Yards site has a long history of rail related and agricultural activities. These investigations identified elevated lead concentrations in surface soil and shallow fill at the site that present an unacceptable risk to human health and the environment and require remediation. The Wheat Yards site is subject to a Statutory Site Audit under Part 4 of the CLM Act, and this investigation is considered relevant for the Audit where the Auditor (Brad May, Epic Environmental) is required to consider offsite migration of contamination and potential risks to offsite ecological and human receptors. Based on previous investigations at the Wheat Yards site, lead was reported as the primary CoC, exceeding the adopted HIL, with co-located arsenic, copper and zinc exceedances of their respective EILs for a commercial/industrial land use.

The site is approximately 76,900 m^2 and comprises five railway sidings, and several former third-party lease areas, including the former JS Hollingsworth site and former Goulburn Caltex Depot. The study area for the offsite lead delineation was defined by ARTC in request for quotation on 18 November 2022 and includes Sloane Street and several streets to the east and west of the site.

The objectives of this investigation were to:

- Inform the potential for the presence and extent of offsite lead contamination and migration (if any) surrounding the Wheat Yards site, as well as co-located arsenic, copper, and zinc.
- Assess the potential or actual risks to offsite human health and/or the environment posed by the primary CoC lead, as well as co-located arsenic, copper and zinc, identified at the Wheat Yards site.
- Determine whether further investigations are warranted.

The scope of work included a detailed site inspection and systematic sampling program using fpXRF and laboratory analysis of soils for lead, as well as co-located arsenic, copper and zinc to delineate the presence and extent of lead contamination and migration offsite.

The results of the investigation identified the following:

- Arsenic and lead were below the adopted site assessment criteria in all samples.
- Elevated copper and zinc concentrations were reported above the adopted EILs for these metals. The exceedances are considered due to the adoption of conservative EIL criteria in absence of site-specific physicochemical soil properties.

None of the samples collected during this investigation reported elevated lead or arsenic concentrations, thus the source of the zinc and copper is likely a result of naturally occurring metals in the soil.

The preliminary CSM, developed in the Offsite Lead Delineation SAQP (Ramboll, 2023), was refined following the completion of the investigation, and the evaluation of SPR linkages identified:

- There was no offsite migration of lead contamination from the Wheat Yards site and therefore no complete exposure pathways from the Wheat Yards site to offsite ecological receptors, including flora fauna of the Mulwaree River.

- There was no offsite migration of lead contamination from the Wheat Yards site and therefore no complete exposure pathways to the offsite residents and recreational users.
- There is the potential for plant root uptake exposure from copper and zinc concentrations, however, the vegetation and transient wildlife present within the offsite road verge study area are considered to be of low ecological value and the copper and zinc levels are considered representative of natural background ranges.

Identified data gaps include:

- The degree and extent of CoPCs associated with historical use of the Wheat Yards site including railyard use, agricultural use, former fuel depots and transformer yards have not been adequately assessed. Soil sampling was co-ordinated to address the potential for offsite migration of lead (and co-located arsenic, copper and zinc) contamination only. The driver to assess these other CoPCs will be based on the results of additional onsite investigation, which has not yet been completed.
- Groundwater and surface water was not assessed as part of this investigation. Ramboll do not consider this warranted based on limited impacts to shallow soils. There is potential for contamination from other CoPCs onsite that have not yet been assessed to impact surface water and groundwater off-site.
- One open drain and one ephemeral tributary were observed during the site inspection to be leaving/entering the site. The sample of drain sediment analysed during this investigation reported low arsenic, copper, lead and zinc concentrations well below the adopted EILs. The tributary was sampled by Parsons Brinkerhoff in 2011, which reported lead concentrations of 1 µg/L and 2 µg/L. However, the tributary was sampled on the upgradient side of the site. It is considered that there is potential for metals and other CoPCs to be migrating from the site into the drain/tributary and connecting with Mulwaree River, however based on the metal concentrations measured within the offsite study area during this investigation, the potential for this to occur is considered to be low.

Notwithstanding the vertical limitations of the soil sampling, the results of the investigation indicate that lead contamination has not migrated offsite into the study area and there are no risks to offsite human health and/or the environment posed by potential lead contamination. No further assessment of lead contamination off-site is required.

15. Limitations

Ramboll Australia Pty Ltd (Ramboll) prepared this report in accordance with the scope of work as outlined in our proposal to ARTC dated 20 December 2022 and in accordance with our understanding and interpretation of current regulatory standards.

A representative program of sampling and laboratory analyses was undertaken as part of this investigation, based on past and present known uses of the site. While every care has been taken, concentrations of contaminants measured may not be representative of conditions between the locations sampled and investigated. We cannot therefore preclude the presence of materials that may be hazardous. Site conditions may change over time. This report is based on conditions encountered at the Site at the time of the report and Ramboll disclaims responsibility for any changes that may have occurred after this time.

The conclusions presented in this report represent Ramboll's professional judgment based on information made available during the course of this assignment and are true and correct to the best of Ramboll's knowledge as at the date of the assessment.

Ramboll did not independently verify all of the written or oral information provided to Ramboll during the course of this investigation. While Ramboll has no reason to doubt the accuracy of the information provided to it, the report is complete and accurate only to the extent that the information provided to Ramboll was itself complete and accurate.

This report does not purport to give legal advice. This advice can only be given by qualified legal advisors.

15.1 User Reliance

This report has been prepared exclusively for ARTC and Transport for NSW and may not be relied upon by any other person or entity without Ramboll's express written permission.

16. References

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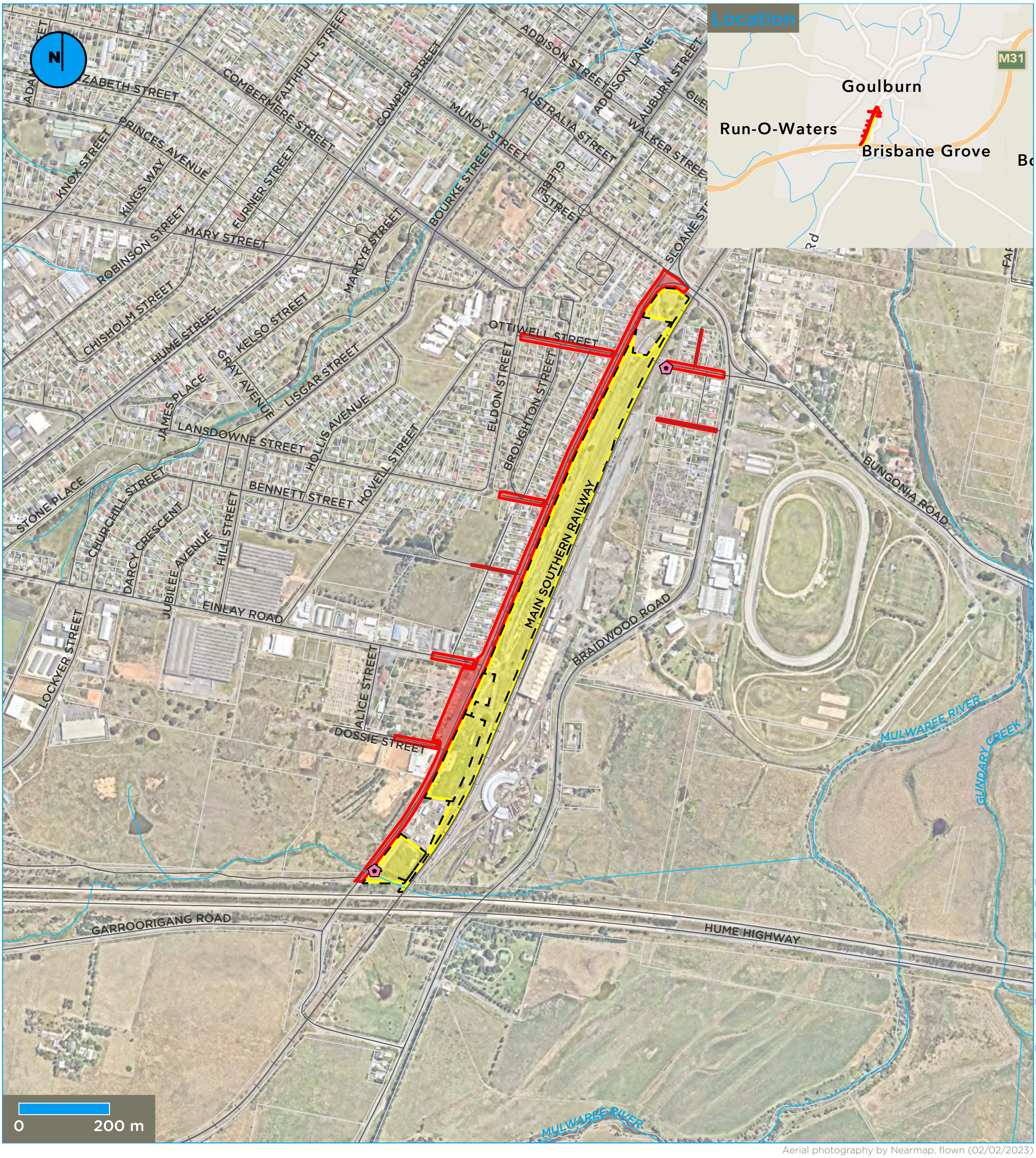
Appendix 1
Figures

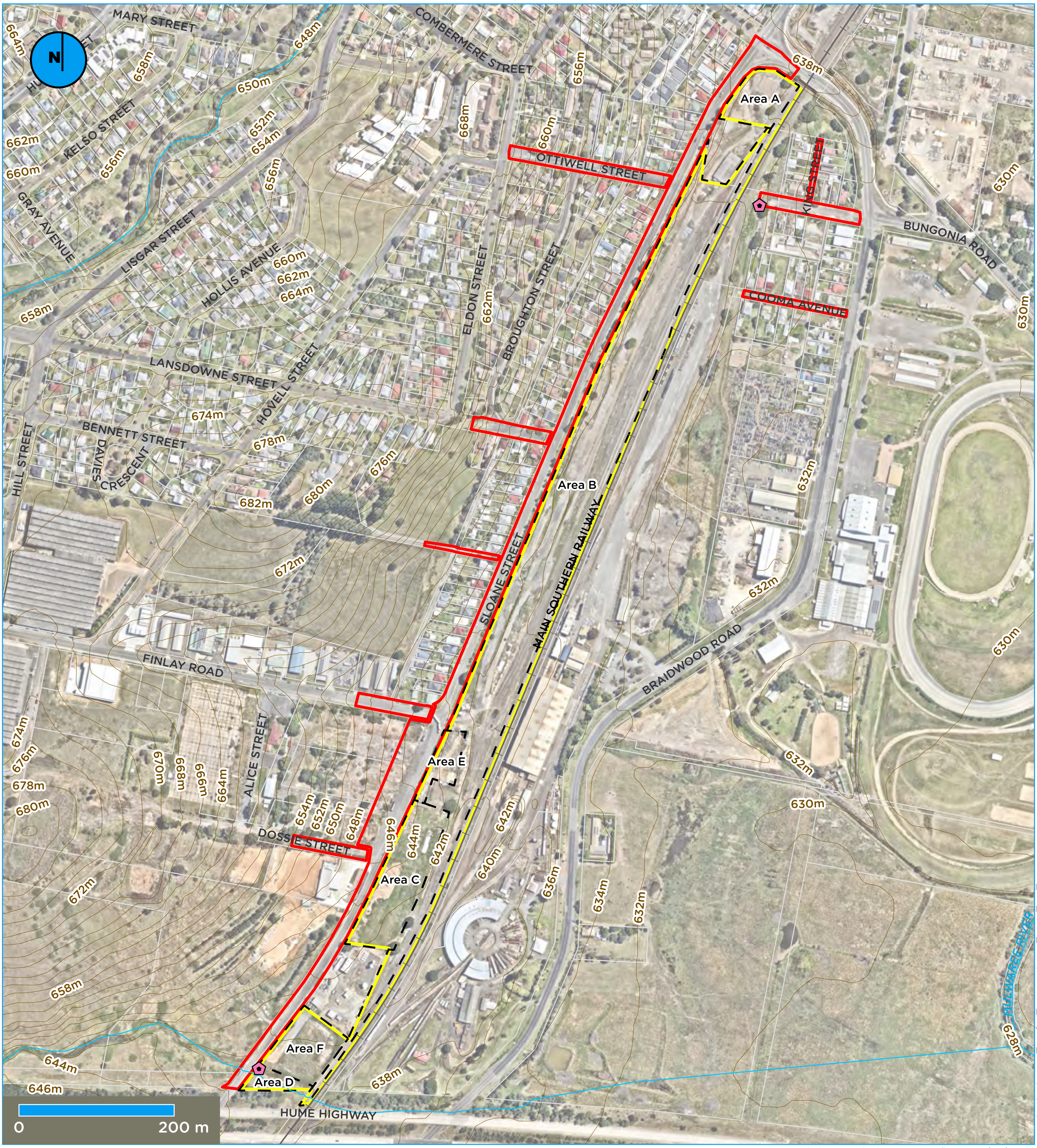


Legend

- Study area
- Approximate site boundary
- Area of concern
- Drain

Figure 1 : Site locality

Goulburn Wheat Yards Offsite Lead Delineation PSI



Aerial photography by Nearmap, flown (02/02/2023)

RAMBOLL AUSTRALIA - GIS MAP file: 318001660_GIS_P002_PSI | 'F004_Layout_V06 | 5/09/2023

Legend

- Study area
- Approximate site boundary
- Area of concern
- Drain
- Elevation contour (2mAHD)
- Ephemeral creek

Area of concern description
Area A - Former Fuel Depot
Area B - Former Wheat Yard Sidings
Area C - Former Stockyards
Area D - Access track
Area E - Former JS Hollingworth & Sons
Area F - Former Caltex Depot

Figure 2 : Site layout

Goulburn Wheat Yards Offsite Lead Delineation PSI

Legend

Study area

Approximate site boundary

Area of concern

Drain

Previous analytical lead concentration (mg/kg)

<1,500

>1,500 <10,000

>10,000

Soil sample location

TRH F2 exceedance ESL

Area of concern description
Area A - Former Fuel Depot
Area B - Former Wheat Yard Sidings
Area C - Former Stockyards
Area D - Access track
Area E - Former JS Hollingworth & Sons
Area F - Former Caltex Depot

Figure 3a : Historical soil results above the site assessment criteria

Goulburn Wheat Yards Offsite Lead Delineation PSI

RAMBOLL AUSTRALIA - GIS MAP file: 318001660_GIS_P002_PSI | F003x_GHDCAVVANNA_FigSeries_v01 | 18/07/2023

Aerial photography by Nearmap, flown 02/02/2023)

Legend

- Study area
- Approximate site boundary
- Area of concern

Previous analytical lead concentration (mg/kg)

- <1,500
- >1,500 <10,000
- >10,000

Area of concern description
Area A - Former Fuel Depot
Area B - Former Wheat Yard Sidings
Area C - Former Stockyards
Area D - Access track
Area E - Former JS Hollingworth & Sons
Area F - Former Caltex Depot

Figure 3b : Historical soil results above the site assessment criteria

Goulburn Wheat Yards Offsite Lead Delineation PSI

Aerial photography by Nearmap, flown 02/02/2023)

RAMBOLL AUSTRALIA - GIS MAP file: 318001660_GIS_P002_PSI | F003x_GHDCAVANNA_FigSeries_v01 | 18/07/2023

Legend

- Study area
- Approximate site boundary
- Area of concern

Previous analytical lead concentration (mg/kg)

- <1,500
- >1,500 <10,000

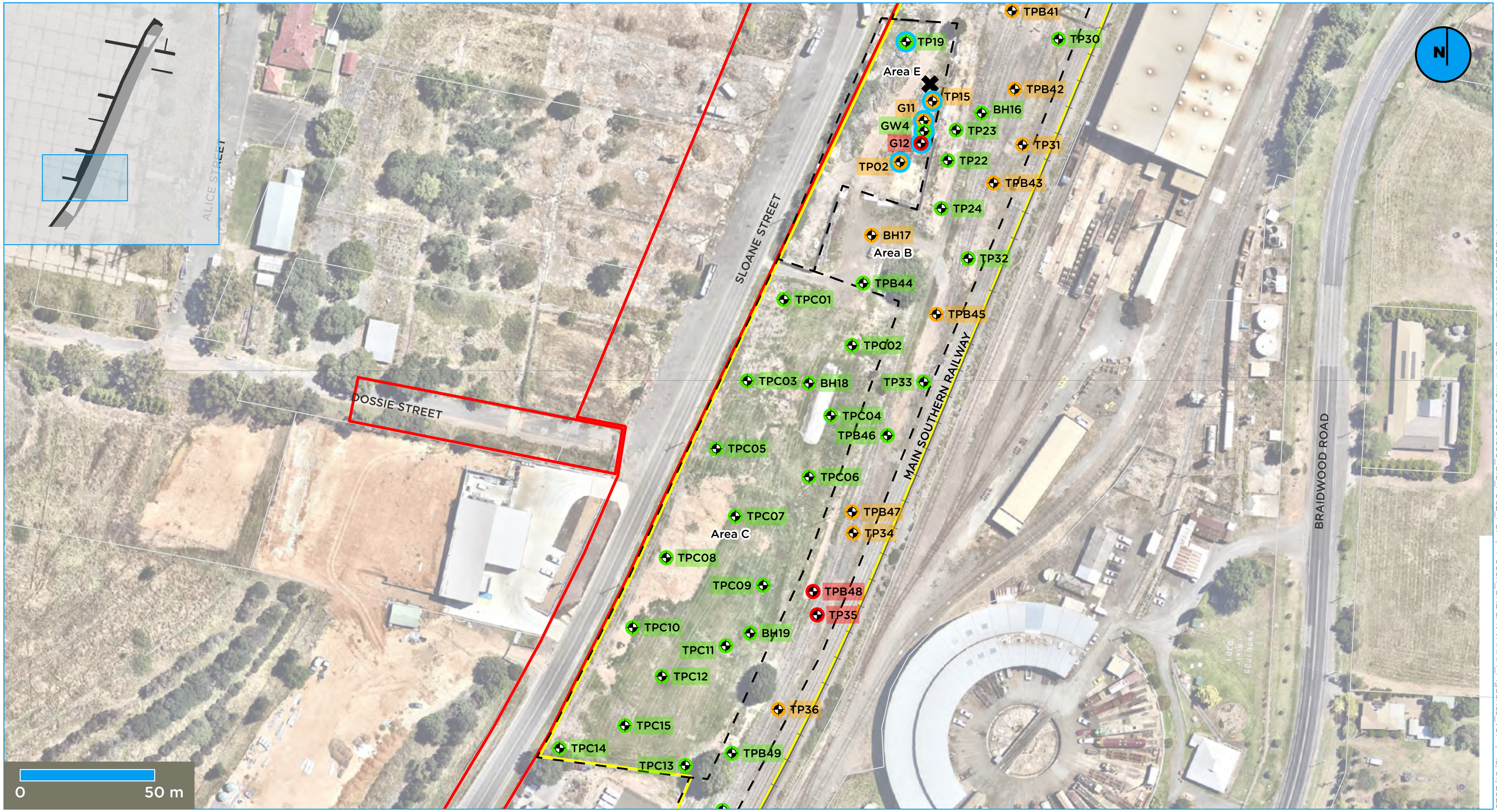
Soil sample location

- BaP exceedance HIL D

Area of concern description
Area A - Former Fuel Depot
Area B - Former Wheat Yard Sidings
Area C - Former Stockyards
Area D - Access track
Area E - Former JS Hollingworth & Sons
Area F - Former Caltex Depot

Figure 3c : Historical soil results above the site assessment criteria

Goulburn Wheat Yards Offsite Lead Delineation PSI



RAMBOLL AUSTRALIA - GIS MAP file: 318001660_GIS_P002_PSI | F003x_GHDCAVVANNA_FigSeries_v01 | 18/07/2023

Aerial photography by Nearmap, flown 02/02/2023)

Legend

- Study area
- Approximate site boundary
- Area of concern

Previous analytical lead concentration (mg/kg)

- <1,500
- >1,500 <10,000
- >10,000

PCB exceedance

Area of concern description
Area A - Former Fuel Depot
Area B - Former Wheat Yard Sidings
Area C - Former Stockyards
Area D - Access track
Area E - Former JS Hollingworth & Sons
Area F - Former Caltex Depot

Figure 3d : Historical soil results above the site assessment criteria

Goulburn Wheat Yards Offsite Lead Delineation PSI

RAMBOLL AUSTRALIA - GIS MAP file : 318001660_GIS_P002_PSI | F003x_GHDCAVVANNA_FigSeries_v02 | 5/09/2023

Aerial photography by Nearmap, flown 02/02/2023)

Legend

Study area

Approximate site boundary

Area of concern

Drain

Previous analytical lead concentration (mg/kg)

<1,500

>1,500 <10,000

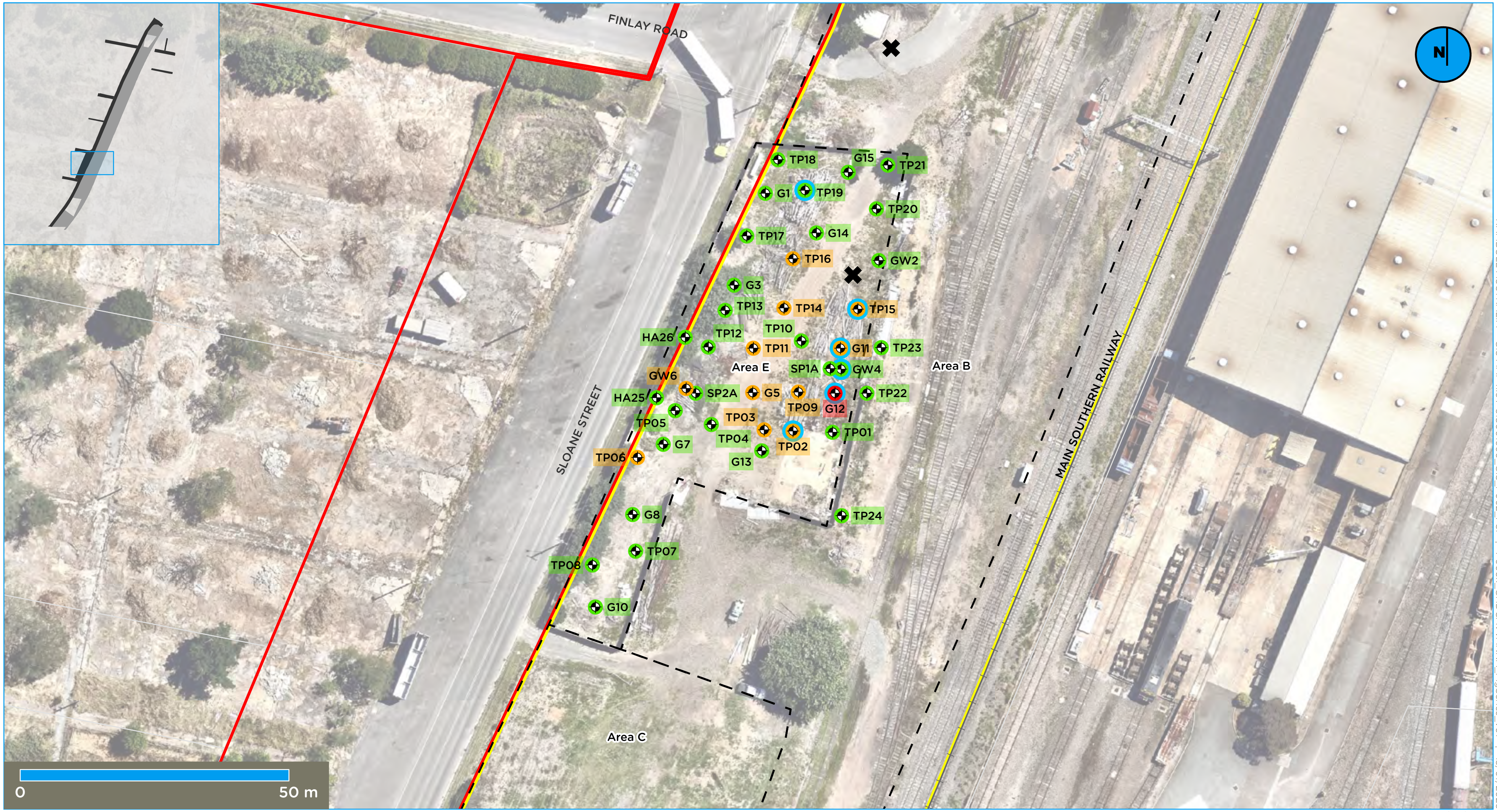
Soil sample location

TRH F1 exceedance HSL D

Area of concern description
Area A - Former Fuel Depot
Area B - Former Wheat Yard Sidings
Area C - Former Stockyards
Area D - Access track
Area E - Former JS Hollingworth & Sons
Area F - Former Caltex Depot

Figure 3e : Historical soil results above the site assessment criteria

Goulburn Wheat Yards Offsite Lead Delineation PSI



Aerial photography by Nearmap, flown 02/02/2023)

RAMBOLL AUSTRALIA - GIS MAP file : 318001660_GIS_P002_PSI | F003x_GHDCAVVANNA_FigSeries_v01 | 18/07/2023

Legend

- Study area
- Approximate site boundary
- Area of concern

Previous analytical lead concentration (mg/kg)

- <1,500
- >1,500 <10,000
- >10,000

PCB exceedance

Area of concern description
Area A - Former Fuel Depot
Area B - Former Wheat Yard Sidings
Area C - Former Stockyards
Area D - Access track
Area E - Former JS Hollingworth & Sons
Area F - Former Caltex Depot

Figure 3f : Historical soil results above the site assessment criteria

Goulburn Wheat Yards Offsite Lead Delineation PSI

RAMBOLL AUSTRALIA - GIS MAP file : 318001660_GIS_P002_PSI | F003G_GHDCAVVANNA_FigSeries_v02 | 5/09/2023

Aerial photography by Nearmap, flown 02/02/2023)

Legend

- Study area
- Approximate site boundary
- Area of concern
- Drain

Groundwater monitoring well

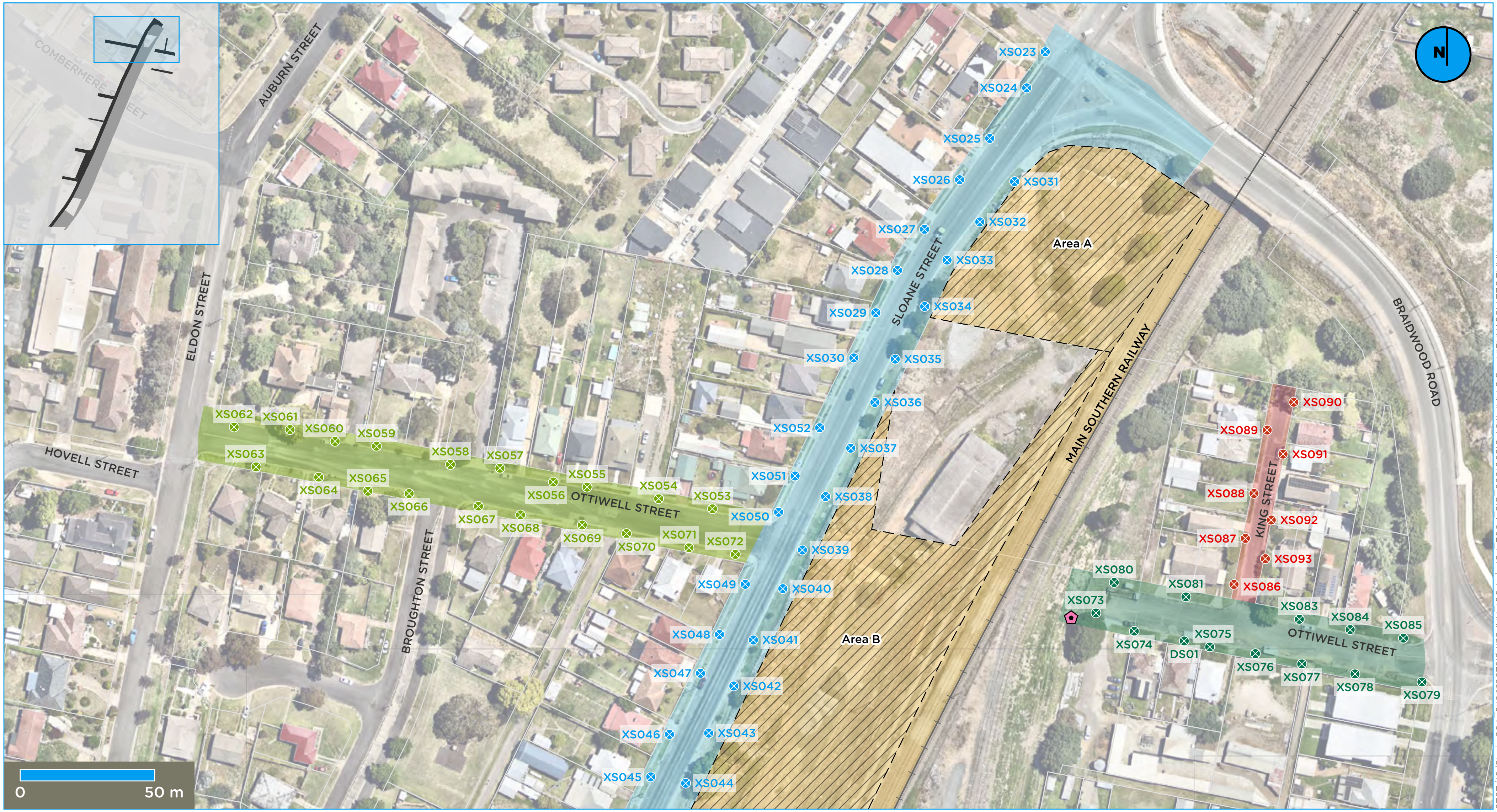
- Naphthalene and phenanthrene exceedance 95% freshwater
- Phenanthrene exceedance 95% freshwater
- No exceedance

- ACM location

Area of concern description
Area A - Former Fuel Depot
Area B - Former Wheat Yard Sidings
Area C - Former Stockyards
Area D - Access track
Area E - Former JS Hollingworth & Sons
Area F - Former Caltex Depot

Figure 3g : Historical groundwater results above the site assessment criteria

Goulburn Wheat Yards Offsite Lead Delineation PSI



Aerial photography by Nearmap, flown 02/02/2023)

Legend

- Approximate site boundary
- King Street study area
- Ottiwell Street (East) study area
- Ottiwell Street (West) study area
- Sloane Street study area
- Area of concern
- Drain

XRF sampling location

- King Street
- Ottiwell Street (East)
- Ottiwell Street (West)
- Sloane Street

Figure 4a : Soil sample locations

Goulburn Wheat Yards Offsite Lead Delineation PSI

Area of concern description
Area A - Former Fuel Depot
Area B - Former Wheat Yard Sidings
Area C - Former Stockyards
Area D - Access track
Area E - Former JS Hollingworth & Sons
Area F - Former Caltex Depot

Aerial photography by Nearmap, flown 02/02/2023)

RAMBOLL AUSTRALIA - GIS MAP file : 318001660_GIS_P002_PSI | F001_XRFSampleLocations_V03 | 18/07/2023

Legend

- Approximate site boundary
- Cooma Avenue study area
- Landsowne Street study area
- Sloane Street study area
- Area of concern

XRF sampling location

- Cooma Avenue
- Landsdowne Street
- Sloane Street

Area of concern description
Area A - Former Fuel Depot
Area B - Former Wheat Yard Sidings
Area C - Former Stockyards
Area D - Access track
Area E - Former JS Hollingworth & Sons
Area F - Former Caltex Depot

Figure 4b : Soil sample locations

Goulburn Wheat Yards Offsite Lead Delineation PSI

RAMBOLL AUSTRALIA - GIS MAP file : 318001660_GIS_P002_PSI | F001_XRFSampleLocations_V03 | 18/07/2023

Aerial photography by Nearmap, flown 02/02/2023)

Legend

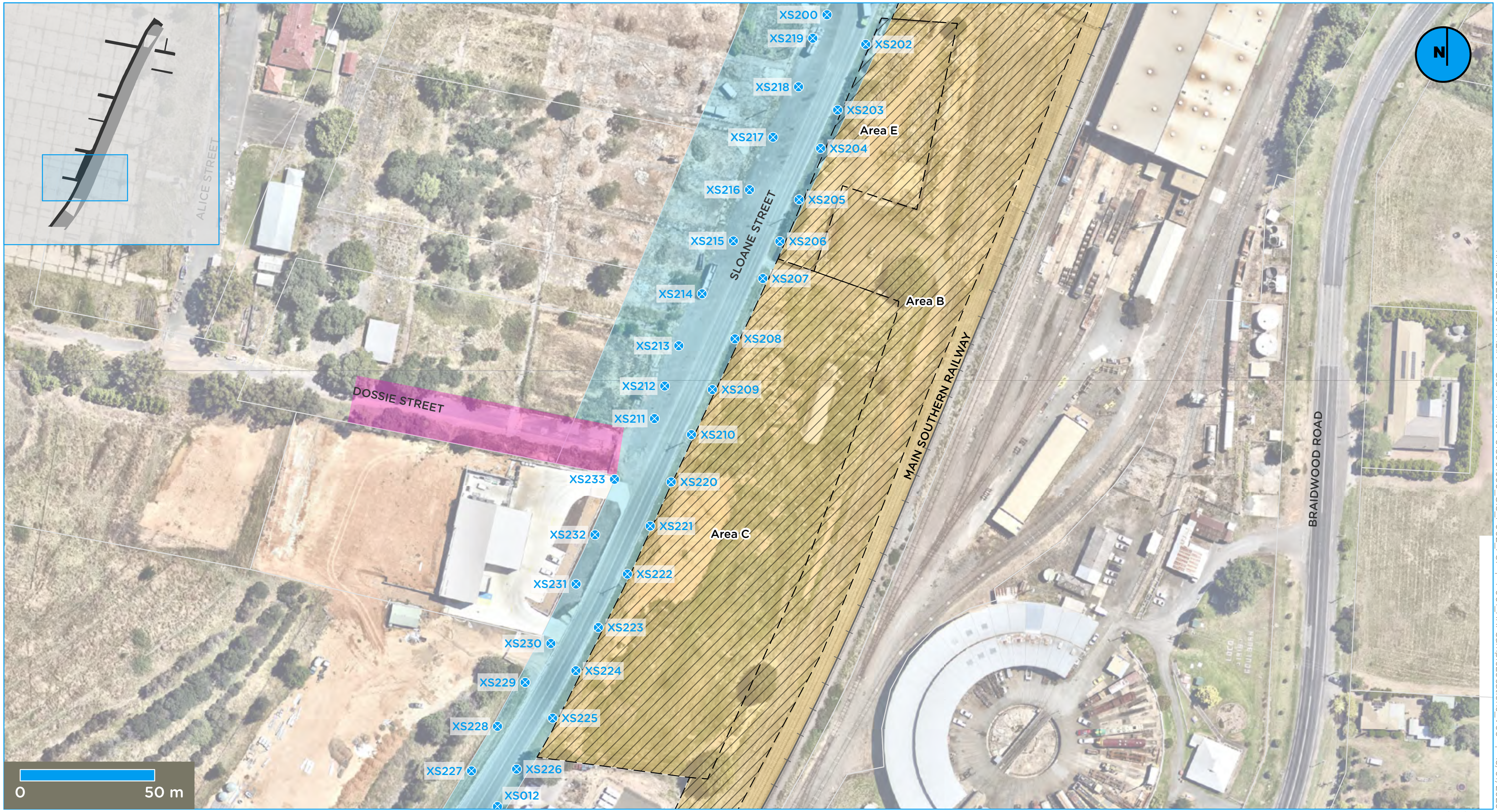
Approximate site boundary
Finlay Road study area
Sloane Street study area
Unnamed road study area

Area of concern

XRF sampling location
Finlay Road
Sloane Street
Unnamed road

Area of concern description
Area A - Former Fuel Depot
Area B - Former Wheat Yard Sidings
Area C - Former Stockyards
Area D - Access track
Area E - Former JS Hollingworth & Sons
Area F - Former Caltex Depot

Figure 4c : Soil sample locations
Goulburn Wheat Yards Offsite Lead Delineation PSI



RAMBOLL AUSTRALIA - GIS MAP file : 318001660_GIS_P002_PSI | F001_XRFSampleLocations_V03 | 18/07/2023

Aerial photography by Nearmap, flown 02/02/2023)

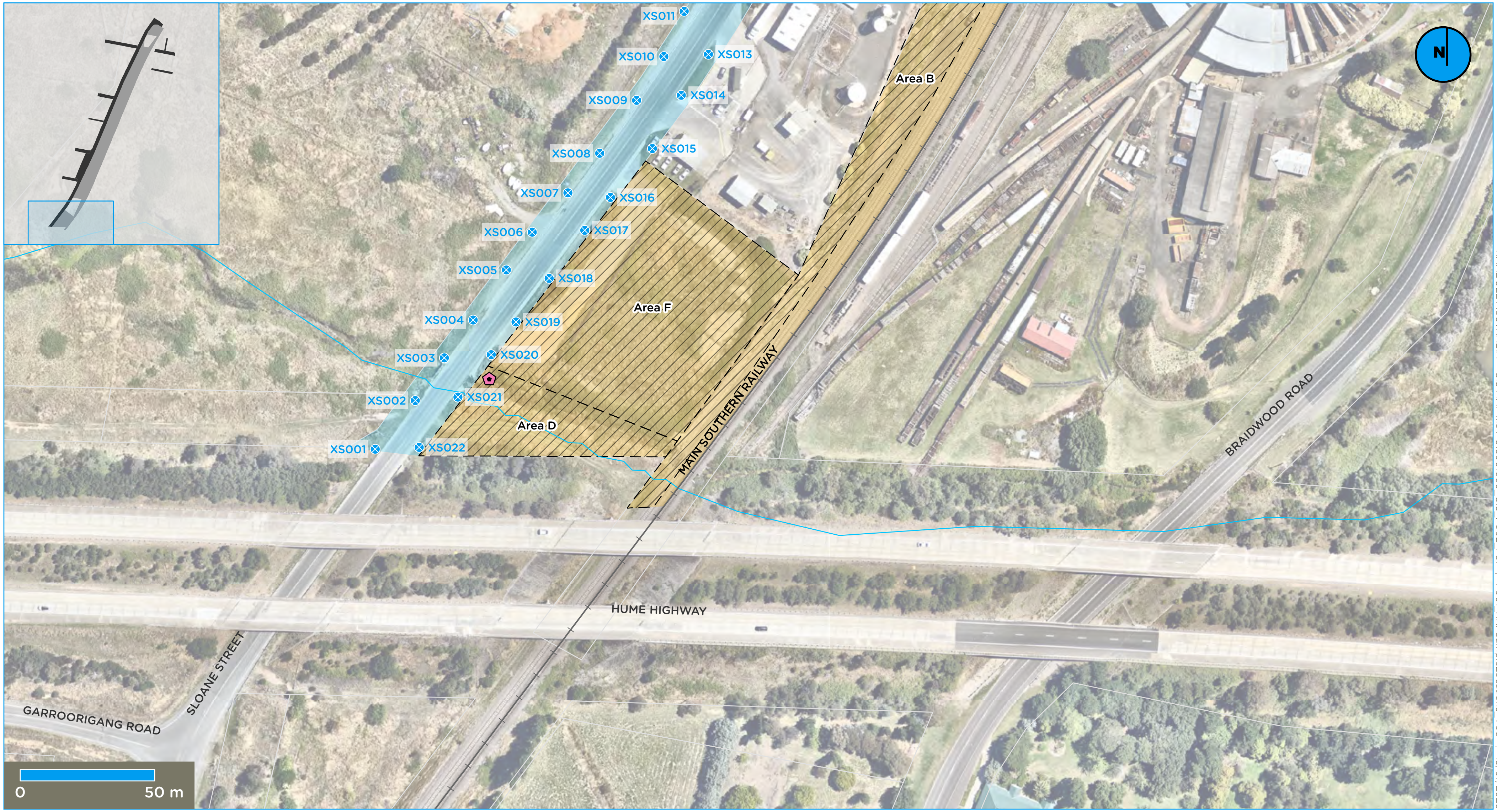
Legend

- Approximate site boundary
- Dossie Street study area (could not access)
- Sloane Street study area
- Area of concern
- XRF sampling location
  - Sloane Street

Area of concern description
Area A - Former Fuel Depot
Area B - Former Wheat Yard Sidings
Area C - Former Stockyards
Area D - Access track
Area E - Former JS Hollingworth & Sons
Area F - Former Caltex Depot

Figure 4d : Soil sample locations

Goulburn Wheat Yards Offsite Lead Delineation PSI



RAMBOLL AUSTRALIA - GIS MAP file : 318001660_GIS_P002_PSI | F001_XRFSampleLocations_V03 | 18/07/2023

Aerial photography by Nearmap, flown 02/02/2023)

Legend

Approximate site boundary

Sloane Street study area

Area of concern

Drain

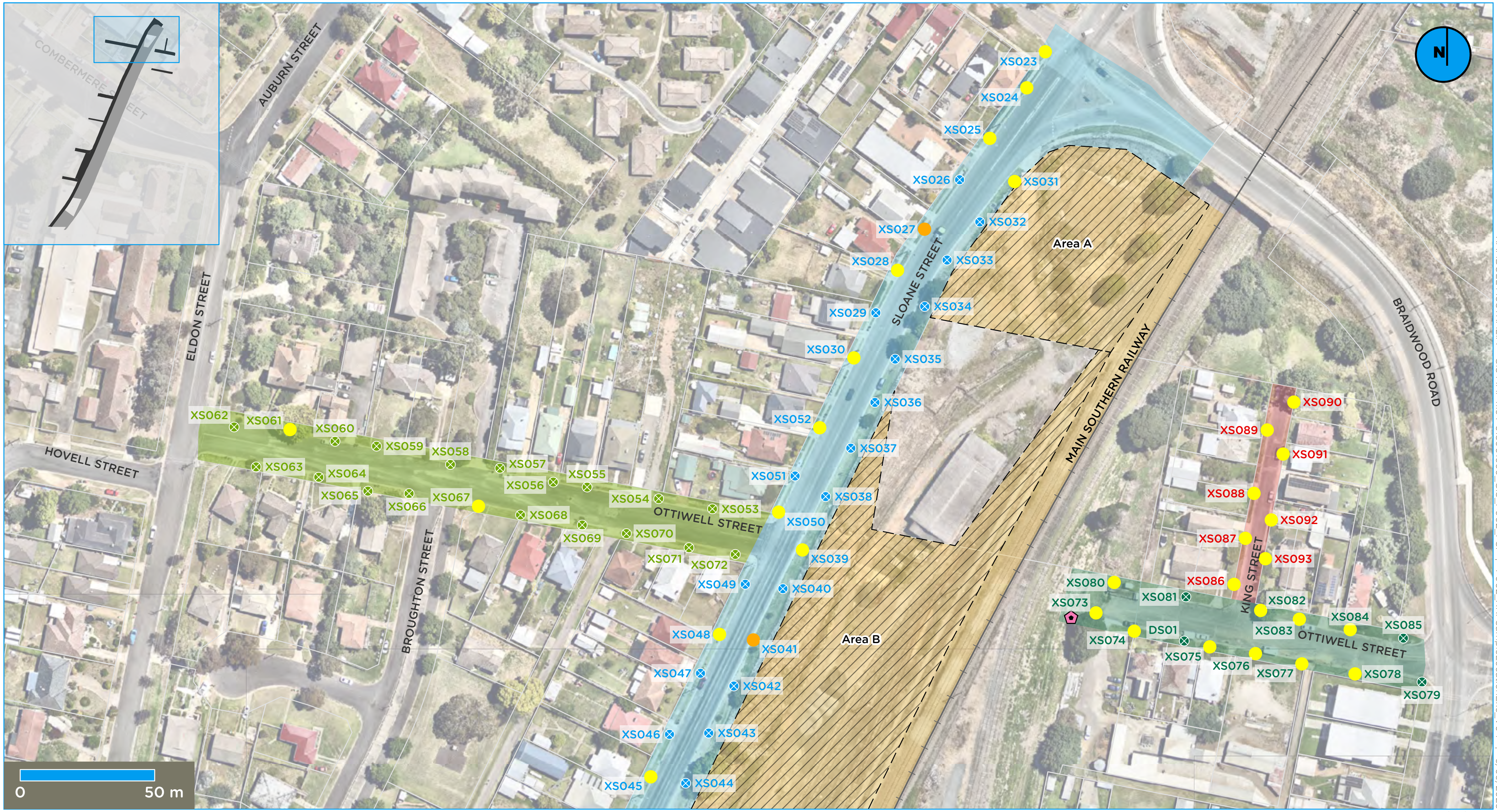
XRF sampling location

Sloane Street

Area of concern description
Area A - Former Fuel Depot
Area B - Former Wheat Yard Sidings
Area C - Former Stockyards
Area D - Access track
Area E - Former JS Hollingworth & Sons
Area F - Former Caltex Depot

Figure 4e : Soil sample locations

Goulburn Wheat Yards Offsite Lead Delineation PSI



RAMBOLL AUSTRALIA - GIS MAP file: 318001660_GIS_F002_PSI | F002_XRFSampleLocationExc_V04 | 6/09/2023

Aerial photography by Nearmap, flown 02/02/2023)

Legend

Approximate site boundary
King Street study area
Ottiwell Street (East) study area
Ottiwell Street (West) study area
Sloane Street study area

Area of concern
Drain

XRF sampling location
King Street
Ottiwell Street (East)
Ottiwell Street (West)
Sloane Street

NEPM 2013 EIL Exceedances
Residential/Public open space - Copper
Residential/Public open space - Zinc

Area of concern description
Area A - Former Fuel Depot
Area B - Former Wheat Yard Sidings
Area C - Former Stockyards
Area D - Access track
Area E - Former JS Hollingworth & Sons
Area F - Former Caltex Depot

Figure 5a : EIL exceedances

Goulburn Wheat Yards Offsite Lead Delineation PSI

Aerial photography by Nearmap, flown 02/02/2023)

Legend

Approximate site boundary
Cooma Avenue study area
Landsowne Street study area
Sloane Street study area
Area of concern

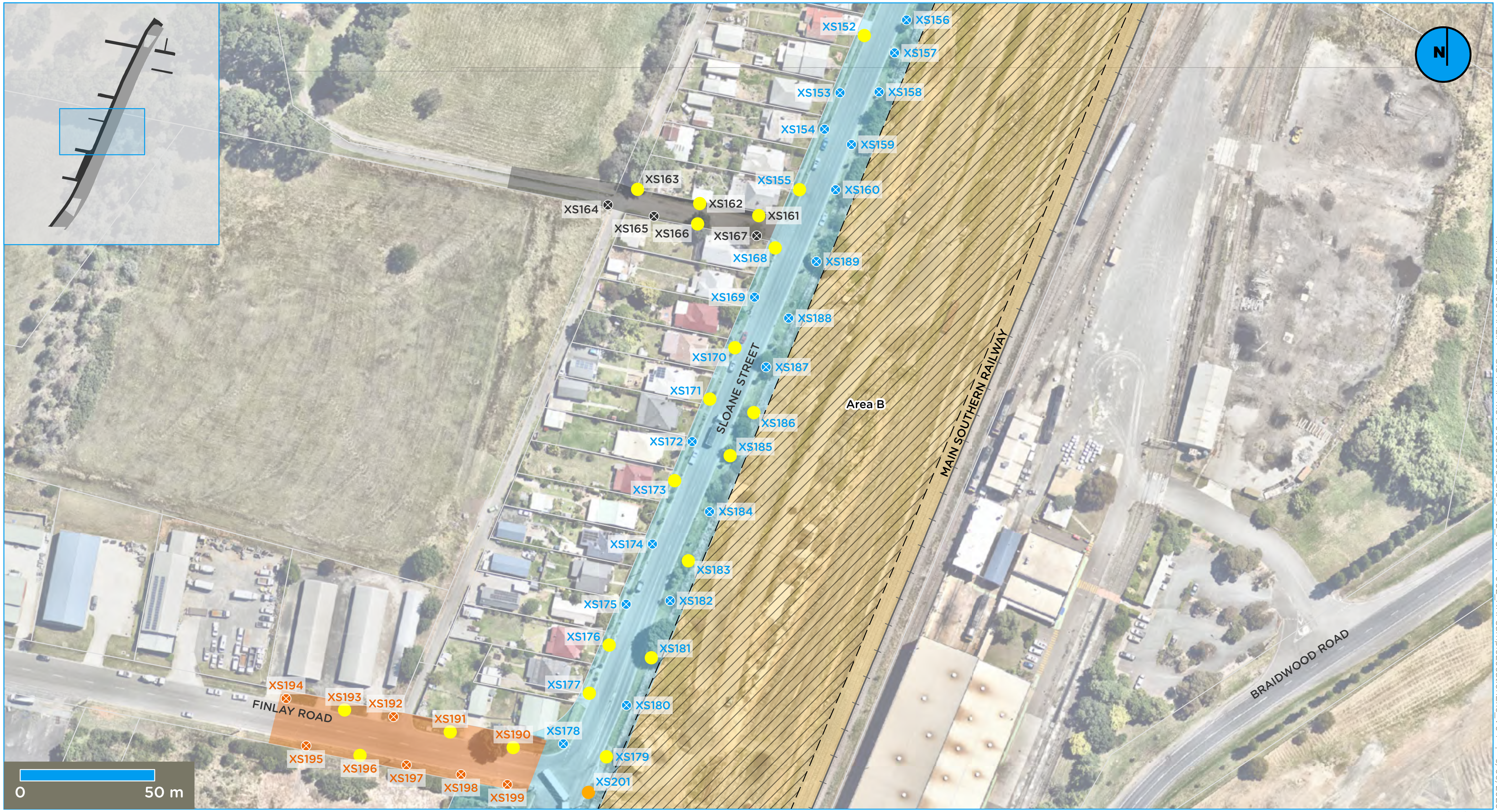
XRF sampling location
- Cooma Avenue
- Landsdowne Street
- Sloane Street

NEPM 2013 EIL Exceedances
- Residential/Public open space - Copper
- Residential/Public open space - Zinc

Area of concern description
Area A - Former Fuel Depot
Area B - Former Wheat Yard Sidings
Area C - Former Stockyards
Area D - Access track
Area E - Former JS Hollingworth & Sons
Area F - Former Caltex Depot

Figure 5b : EIL exceedances

Goulburn Wheat Yards Offsite Lead Delineation PSI



Aerial photography by Nearmap, flown 02/02/2023)

RAMBOLL AUSTRALIA - GIS MAP file : 318001660_GIS_P002_PSI | F002_XRFSampleLocationExc_V04 | 6/09/2023

Legend

Approximate site boundary
Area of concern
Finlay Road study area
Sloane Street study area
Unnamed road study area

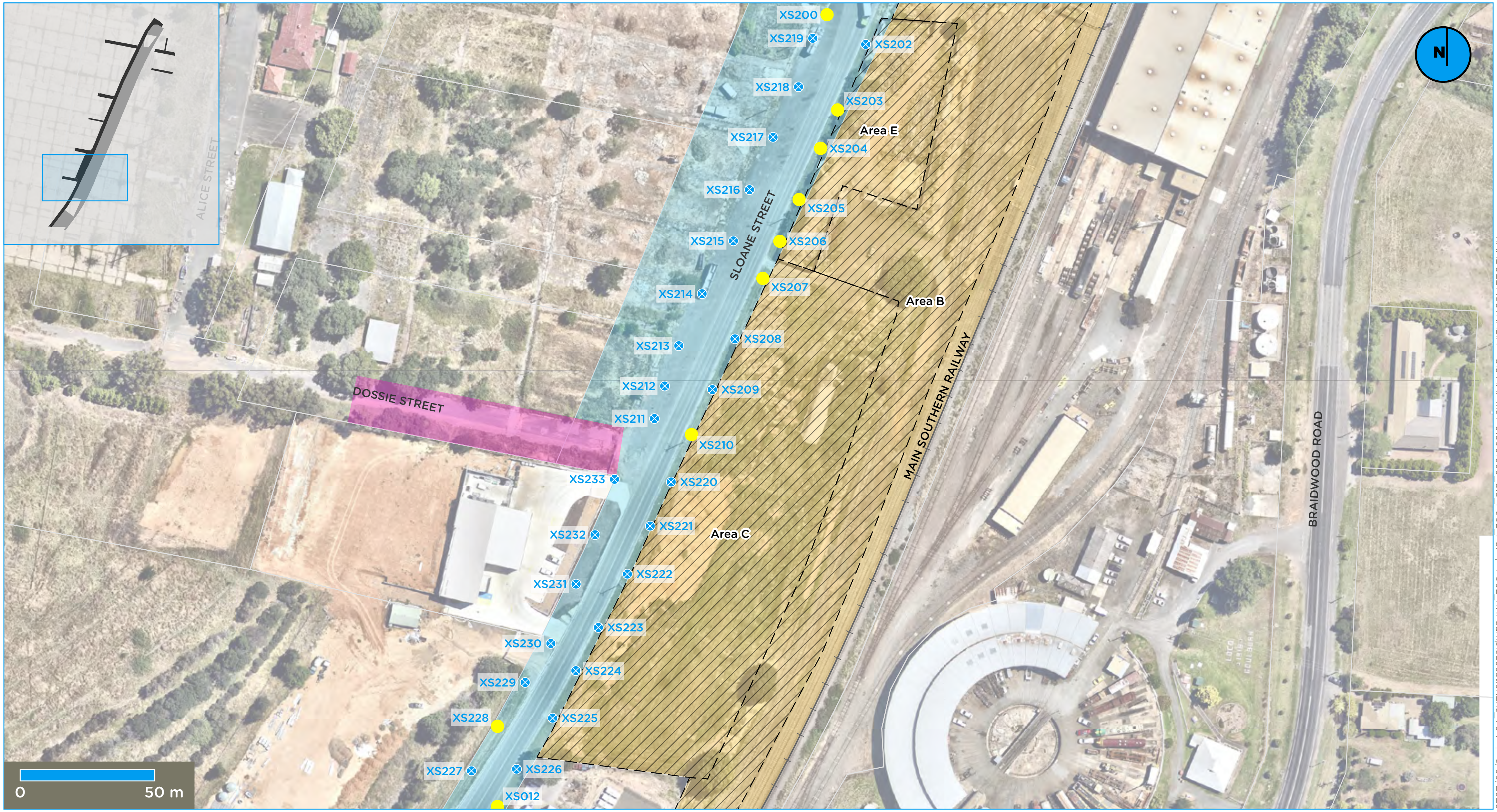
XRF sampling location
- Finlay Road
- Sloane Street
- Unnamed road

NEPM 2013 EIL Exceedances
- Residential/Public open space - Copper
- Residential/Public open space - Zinc

Area of concern description
Area A - Former Fuel Depot
Area B - Former Wheat Yard Sidings
Area C - Former Stockyards
Area D - Access track
Area E - Former JS Hollingworth & Sons
Area F - Former Caltex Depot

Figure 5c : EIL exceedances

Goulburn Wheat Yards Offsite Lead Delineation PSI



Aerial photography by Nearmap, flown 02/02/2023)

Legend

Approximate site boundary

Dossie Street study area (could not access)

Sloane Street study area

Area of concern

XRF sampling location

Sloane Street

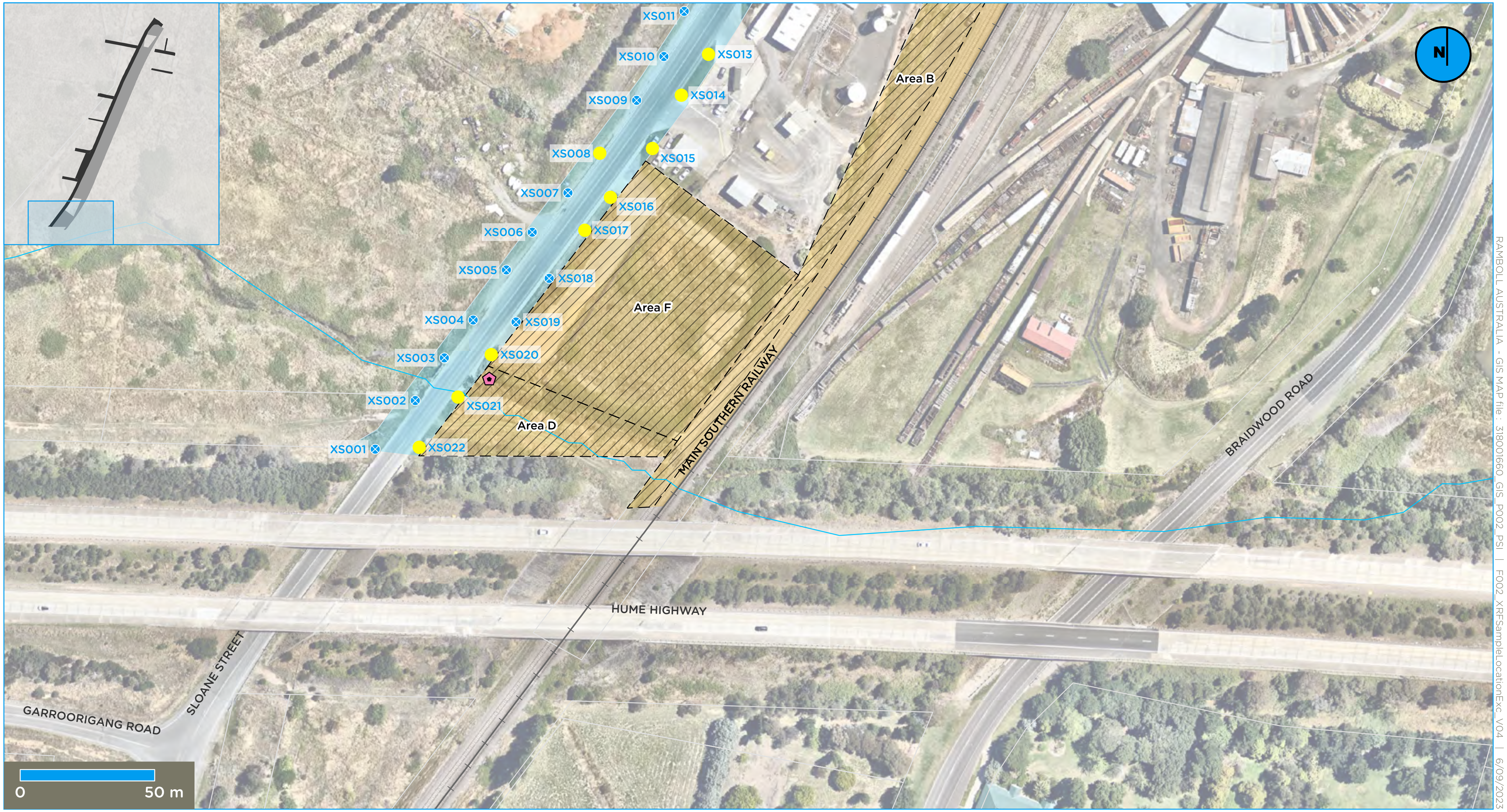
NEPM 2013 EIL Exceedances

Residential/Public open space - Zinc

Area of concern description
Area A - Former Fuel Depot
Area B - Former Wheat Yard Sidings
Area C - Former Stockyards
Area D - Access track
Area E - Former JS Hollingworth & Sons
Area F - Former Caltex Depot

Figure 5d : EIL exceedances

Goulburn Wheat Yards Offsite Lead Delineation PSI



Aerial photography by Nearmap, flown 02/02/2023)

Legend

Approximate site boundary

Sloane Street study area

Area of concern

Drain

XRF sampling location

Sloane Street

NEPM 2013 EIL Exceedances

Residential/Public open space - Zinc

Area of concern description
Area A - Former Fuel Depot
Area B - Former Wheat Yard Sidings
Area C - Former Stockyards
Area D - Access track
Area E - Former JS Hollingworth & Sons
Area F - Former Caltex Depot

Figure 5e : EIL exceedances

Goulburn Wheat Yards Offsite Lead Delineation PSI

Appendix 2
Site Photographs

Photo 1: Photograph of XRF sampling at the southern end, north side of Sloane Street at the base of the Hume Hwy facing south. Sample XS001

Photo 2: Photograph of the Soil and grass at area of testing in Photo 1. Brown gravelly silt, with some dried patches of grass, however generally healthy.

Photo 3: Photo taken sampling with XRF opposite Ampol petrol station on the southern end of Sloane Street 100m Northeast of the Hume. Sample XS009

Photo 4: Brown gravelly silt. High percentage of gravel within this area with grass mostly constricted to fence line. Heavy vehicle traffic within this area. Sample XS010

Photo 5: Photo taken XRF sampling on nature strip of Ampol petrol station. Sample XS013. Brown Silt, mostly grass with some bare patches of gravel.

Photo 6: Close up of sample XS014 showing bare patches of gravel.

Photo 7: Sample location XS024. Northern end, north side of Sloane Street. Intersection of Mundy Street and Braidwood Rd. Grass is in good condition.

Photo 8: Brown fine topsoil silt from XRF sample XS024. Grass appeared to be in good condition.

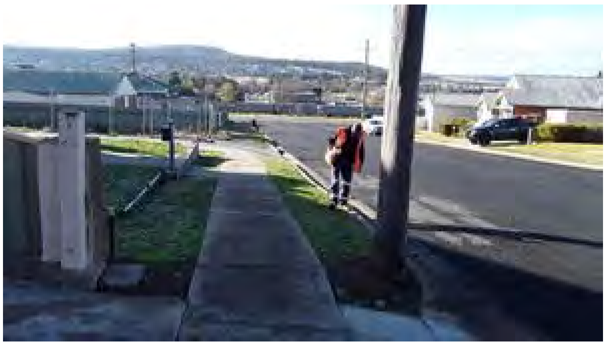


Photo 9: Gravely silt from XRF sampling location XS055 on nature strip, Ottiwell Street. Approximately 83m from Wheat Yards. Grass appeared to be in good condition.

Photo 10: Photograph of sample XS058. Gravely silt dark brown wit healthy green grass surrounding entire area

Photo 11: Gravelly silt, dark brown from XRF sampling location XS059 towards the Northern end of Ottiwell Street. Grass appeared to be in good condition.

Photo 12: Sample XS073 on the south end of Ottiwell Street East, South of Wheat Yards. Sample was taken near newly installed drain 1m from Fence line. Area contained thick grass in relatively good condition.

Photo 13: Photograph of soil sample at location XS073 showing gravelly silty sand.

Photo 14: Photograph of sample XS090. High level of leaf coverage and minimal grass. Chicken wire as hammered into the ground over entire sampling location

Photo 15: Sample location XS075 halfway down south side Ottiwell Street East, approximately 50m from Wheat Yard site.

Photo 16: Close up of sample location XS075 showing gravelly silty soil. Bare patches in grass, likely from foot traffic. Silt build up had formulated along the drain way where testing occurred

Photo 17: Sampling location XS077. Large amount of sediment near drain and bare patches of grass near driveway. Suspected to be from car and foot traffic.

Photo 18: Photograph showing sample XS078. This area contained thick green grass with no visible signs of dead patches

Photo 19: Photograph of drain and sediment on the South end of Ottiwell Street, corner of Ottiwell Street and Braidwood Rd.

Photo 20: Photograph of the sediment sample DS01 build up on road of Ottiwell St and XRF testing of the sediment

Photo 21: Photograph of XRF sample XS148 on the corner of Lansdowne Street and Sloane Street. Soil described as gravelly silty sand.

Photo 22: Photograph of sample XS156 on the southern side of Sloane Street against Wheat Yards boundary fence line. Gravel and bare patches of grass observed.

Photo 23: Photograph of soil sample XS158 showing large patch of gravelly silty sand.

Photo 24: Photograph of XRF sample XS162 on Unnamed Road. This road continued from the boundary line of Wheat Yards. Grass was relatively thick and green.

Photo 25: Photograph of soil sample XS163 on unnamed road. Dark brown gravely silt. Grass appeared to be in good condition.

Photo 26: Photograph taken at sample XS200 at the intersection of Finlay Road and Sloane Street. Soil was described as fine, gravelly silt and areas of bare patches of grass were noted. This was the nature strip of a working construction site.

Photo 27: Photograph taken at sample XS211. Sample could not be taken due to asphalt pavement, concrete gutter and a high fence on concrete for construction site.

Photo 28: Photograph of heavily concreted area of working construction site at sample location XS211

Photo 29: Sample XS225. Photograph taken facing south towards Ampol petrol station and Hume Hwy at the southern boundary of Wheat Yards.

Photo 30: Photograph of soil samples XS223 showing a duplicate and triplicate taken.

Photo 31: Culvert for ephemeral tributary leading into the Wheat Yards on the southern end of Sloane Street 100m from Hume. Photo is facing South towards Hume Hwy.

Photo 32: Close up of the ephemeral tributary/drain path towards Wheat Yard on Southern end of Sloane Street 100m from Hume Hwy.

Photo 33: New drain installed on the east end of Ottiwell Street at sample location XS073. Drain appears to run under the train line with no visible starting point, potentially coming from the site.

Photo 34: Drain on eastern end of Ottiwell Street on Wheat Yard boundary.

Appendix 3
Raw fpXRF Output

Index	Reading Nc	Time	Type	Duration	Units	Sigma Valu	Sequence	Res	EScale	Shape Tim	SAMPLE	LOCATION	INSPECTOF	MISC	NOTE	Flags	COR 1	COR 2	LATITUDE I	LONGITUD	ALTITUDE	Results	Action Lev	UPC	Brand	Sample	Name	Part	Color	Inspector	Misc 1	Misc 2	User1	USER1	HEAT	LOT	BATCH	Pb	Pb Error	Zn	Zn Error	Cu	Cu Error	As	As Error
869	869	19/06/2023 14:31	System Che	51.36	cps	2	Final	180.1	7.39	1																																			
870	870	19/06/2023 14:32	System Che	50.95	cps	2	Final	157.8	7.4	4																																			
871	871	19/06/2023 14:48	Soil	31.51	ppm	2	Final				XS001																											< LOD	8.69	< LOD	20.35	< LOD	41.76	< LOD	7.88
872	872	19/06/2023 14:51	Soil	31.01	ppm	2	Final				XS002																											< LOD	17.27	< LOD	42.07	< LOD	93.01	< LOD	15.8
873	873	19/06/2023 14:54	Soil	30.91	ppm	2	Final				XS003																											< LOD	8.28	51.4	11.4	< LOD	28.65	9.41	4.88
874	874	19/06/2023 14:57	Soil	30.9	ppm	2	Final				XS004																											< LOD	8.41	40.7	11.43	< LOD	30.51	< LOD	7.06
875	875	19/06/2023 15:00	Soil	31.04	ppm	2	Final				XS005																											11.88	6.9	18.46	12.17	< LOD	34.79	< LOD	8.92
876	876	19/06/2023 15:04	Soil	31.38	ppm	2	Final				XS006																											< LOD	19.77	< LOD	43.41	< LOD	106.19	< LOD	17.17
877	877	19/06/2023 15:07	Soil	31.31	ppm	2	Final				XS007																											< LOD	11.47	< LOD	32.3	< LOD	70.22	15.77	7.76
878	878	19/06/2023 15:10	Soil	31.72	ppm	2	Final				XS008																											13.44	5.08	76.11	10.04	< LOD	21.71	< LOD	6.3
879	879	19/06/2023 15:13	Soil	31.76	ppm	2	Final				XS009																											< LOD	19.77	< LOD	51.96	< LOD	113.36	< LOD	17.43
880	880	19/06/2023 15:17	Soil	31.3	ppm	2	Final				XS010																											< LOD	12.48	< LOD	26.71	< LOD	52.42	< LOD	10.66
881	881	19/06/2023 15:37	Soil	31.37	ppm	2	Final				sio2_01																											< LOD	3.1	< LOD	6.05	< LOD	11.89	< LOD	2.6
882	882	19/06/2023 15:39	Soil	30.91	ppm	2	Final				RCRA_01																											456.42	15.98	51.7	7.07	20.77	10.64	476.23	15.99
883	883	19/06/2023 15:43	Soil	31.46	ppm	2	Final				XS011																											< LOD	11.29	< LOD	23.09	58.12	32.03	< LOD	9.6
884	884	19/06/2023 16:11	Soil	31.42	ppm	2	Final				XS012																											< LOD	11.12	63.67	18.96	< LOD	49.17	14.65	6.93
885	885	19/06/2023 16:14	Soil	31.34	ppm	2	Final				XS013																											< LOD	8.69	367.96	26.63	< LOD	41.07	< LOD	7.9
886	886	19/06/2023 16:16	Soil	31.31	ppm	2	Final				XS014																											< LOD	8.58	119.79	16.53	< LOD	33.82	< LOD	7.15
887	887	19/06/2023 16:18	Soil	30.95	ppm	2	Final				XS015																											9.91	5.71	211.7	17.01	33.05	19.18	< LOD	7.06
888	888	19/06/2023 16:21	Soil	31.3	ppm	2	Final				XS016																											< LOD	9.14	284.41	23.17	< LOD	38.4	< LOD	7.77
889	889	19/06/2023 16:26	Soil	31.32	ppm	2	Final				XS017																											< LOD	11.17	94.27	18.04	45.41	29.21	< LOD	9.46
890	890	19/06/2023 16:28	Soil	31.46	ppm	2	Final				XS018																											< LOD	14.65	< LOD	36.5	< LOD	76.98	< LOD	12.69
891	891	19/06/2023 16:30	Soil	31.32	ppm	2	Final				XS019																											< LOD	13.88	< LOD	31.22	< LOD	63.64	< LOD	11.66
892	892	19/06/2023 16:32	Soil	31.32	ppm	2	Final				XS020																											< LOD	4.74	102.42	7.99	25.65	9.74	4.06	2.69
893	893	19/06/2023 16:34	Soil	30.92	ppm	2	Final				XS021																											< LOD	10.62	71.89	16.15	48.48	27.11	10.26	6.23
894	894	19/06/2023 16:36	Soil	31.28	ppm	2	Final				XS0222																											19.32	5.13	180.31	12.69	49.51	14.37	< LOD	6.31
895	895	19/06/2023 16:41	Soil	30.91	ppm	2	Final				SI02_02																											< LOD	3.15	6.65	4.09	< LOD	12.06	< LOD	2.64
896	896	19/06/2023 16:42	Soil	31.29	ppm	2	Final				RCRA_02																											252.9	10.37	60.04	6	< LOD	11.67	259.2	10.26
897	897	20/06/2023 7:18	System Che	51.3	cps	2	Final	180.83	7.39	1																																			
898	898	20/06/2023 7:19	System Che	51.02	cps	2	Final	159.87	7.4	4																																			
899	899	20/06/2023 7:24	Soil	31.3	ppm	2	Final				XS023																											24.26	8.82	91.58	18.53	< LOD	45.06	< LOD	10.47
900	900	20/06/2023 7:28	Soil	31.26	ppm	2	Final				XS024																											35.43	10.36	135.56	22.98	< LOD	51.22	< LOD	11.9
901	901	20/06/2023 7:30	Soil	31.46	ppm	2	Final				XS025																											< LOD	21.48	95.74	37.78	< LOD	101.68	< LOD	18.11
902	902	20/06/2023 7:33	Soil	31.51	ppm	2	Final				XS026																											31.81	18.02	< LOD	61.32	< LOD	125.88	< LOD	21.38
903	903	20/06/2023 7:36	Soil	30.94	ppm	2	Final				XS027																											< LOD	17.85	< LOD	53.63	117.57	75.85	< LOD	15.95
904	904	20/06/2023 7:39	Soil	31.31	ppm	2	Final				XS028																											23.95	5	138.06	10.69	< LOD	18.1	< LOD	6.23
905	905	20/06/2023 7:43	Soil	31.03	ppm	2	Final				XS029																											< LOD	9.07	39.68	13.27	< LOD	35.02	< LOD	7.35
906	906	20/06/2023 7:45	Soil	31.3	ppm	2	Final				XS030																											12.09	5.61	108.7	13.08	38.94	18.41	< LOD	7.04
907	907	20/06/2023 7:50	Soil	31.01	ppm	2	Final				SIO2_03																											< LOD	3.33	9.67	4.19	< LOD	11.78	< LOD	2.71
908	908	20/06/2023 7:52	Soil	30.88	ppm	2	Final				RCRA_03																											372.28	13.62	46.84	6.39	21.01	9.66	389.06	13.61
909	909	20/06/2023 8:00	Soil	31.41	ppm	2	Final				XS031																											< LOD	4.46	142.17	10.25	< LOD	16.64	4.07	2.65
910	910	20/06/2023 8:02	Soil	31.03	ppm	2	Final				XS032																											< LOD	11.11	< LOD	23.14	< LOD	45.57	< LOD	9.67
911	911	20/06/2023 8:04	Soil	31.31	ppm	2	Final				XS033																											< LOD	14.41	< LOD	31.61	< LOD	68.84	< LOD	12.49
912	912	20/06/2023 8:07	Soil	31.06	ppm	2	Final				XS034																											< LOD	9.88	28.17	13.69	< LOD	38.47	< LOD	8.25
913	913	20/06/2023 8:09	Soil	31.29	ppm	2	Final				XS035																											< LOD	8.81	19.19	11.9	< LOD	34.72	< LOD	7.69
914	914	20/06/2023 8:12	Soil	31.34	ppm	2	Final				XS036																											< LOD	13.36	< LOD	29.29	< LOD	66.34	< LOD	10.55
915	915	20/06/2023 8:14	Soil	31.43	ppm	2	Final				XS037																											< LOD	8.63	< LOD	19.12	49.33	27.04	< LOD	7.67
916	916	20/06/2023 8:16	Soil	31.34	ppm	2	Final				XS038																											< LOD	8.77	30.74	12.88	38.94	24.82	< LOD	7.74
917	917	20/06/2023 8:18	Soil	35.75	ppm	2	Final				XS039																											21.15	6.96	61.58	13.59	44.48	22.92	9.92	5.98
918	918	20/06/2023 8:22	Soil	31.32	ppm	2	Final				XS040																											< LOD	10.91	31.25	16.7	< LOD	46.81	< LOD	9.16
919	919	20/06/2023 8:26	Soil	30.93	ppm	2	Final				SIO2_04																											< LOD	3.25	8	4.23	< LOD	11.96	< LOD	2.6
920	920	20/06/2023 8:28	Soil	30.87	ppm	2	Final				RCRA_04																											417.79	14.95	46.46	6.68	23	10.28	414.08	14.8
921	921	20/06/2023 8:38	Soil	31.1	ppm	2	Final				XS041																											< LOD	12.19	< LOD	31.64	88.03	46.84	< LOD	10.39
922	922	20/06/2023 8:41	Soil	31.35	ppm	2	Final				XS042																											< LOD	11.69	< LOD	25.47	< LOD	53.42	< LOD	10.17
923	923	20/06/2023 8:43	Soil	30.9	ppm	2	Final				XS043																											< LOD	14.99	< LOD	38.82	< LOD	83.38	< LOD	13.78
924	924	20/06/2023 8:45	Soil	31.52	ppm	2	Final				XS044																											< LOD	16.03	< LOD	39.55	< LOD	80.54	< LOD	13.74
925	925	20/06/2023 8:48	Soil	31.4	ppm	2	Final				XS045																											< LOD	8.6	77.5	13.74	< LOD	31.69	< LOD	7.31
926	926	20/06/2023 8:50	Soil	31.47	ppm	2	Final				XS046																											< LOD	7.19	43.23	10.76	< LOD	27.31	< LOD	6.07
927	927	20/06/2023 8:53	Soil	31.31	ppm	2	Final				XS047																											< LOD	5.12	40.66	7.82	< LOD	18.49	< LOD	4.34
928	928	20/06/2023 8:56	Soil	31.33	ppm	2	Final				XS048																											8.29	3.64	171.49	10.04	16.34	9.82	4.72	3.05
929	929	20/06/2023 8:59	Soil	31.36	ppm	2	Final				XS049																											< LOD	12.59	< LOD	27.39	< LOD	58.09	< LOD	10.78
930	930	20/06/2023 9:01	Soil	31.37	ppm	2	Final				XS050																											14	4.25	91.59	8.74	< LOD	16.48	6.09	3.61
931	931	20/06/2023 9:04	Soil	31.31	ppm	2	Final				SIO2_05																											< LOD	2.98	6.26	4.1	< LOD	12.01	< LOD	2.58
932	932	20/06/2023 9:06	Soil	31.26	ppm	2	Final				RCRA_05																											452.68	15.84	52.16	7.07	16.81	10.43	439.52	15.61
933	933	20/06/2023 9:10	Soil	31.04	ppm	2	Final				XS051																											< LOD	7.33	24.79	10.53	< LOD	29.6	< LOD	6.25
934	934	20/06/2023 9:12	Soil	31.28	ppm	2	Final				XS052																											< LOD	8	69.95	13.2	< LOD	31.51	< LOD	6.74
935	935	20/06/2023 9:19	Soil	31.1	ppm	2	Final				XS053																											13.42	7.98	43.52	16.2	< LOD	43.16	< LOD	9.96
936	936	20/06/2023 9:21	Soil	30.9	ppm	2	Final				XS054																											< LOD	9.65	52.51	15.58	< LOD	38.94	< LOD	7.73
937	937	20/06/2023 9:25	Soil	30.91	ppm	2	Final				XS055																											19.03	5.4	53.08	9.16	< LOD	21.61	< LOD	6.74
938	938	20/06/2023 9:28	Soil	31.09	ppm	2	Final				XS056																											< LOD	10.33	31.6	14.96	< LOD	41.73	< LOD	8.63
939	939	20/06/2023 9:32	Soil	31	ppm	2	Final				XS057																											< LOD	5.04	33.25	6.83	< LOD	17	< LOD	4.15
940	940	20/06/2023 9:35	Soil	30.94	ppm	2	Final				XS058																											13.07	4.37	43.81	7.39	< LOD	17.44	< LOD	5.28
941	941	20/06/2023 9:38	Soil	31	ppm	2	Final				XS059																											< LOD	9.73	< LOD	18.22	< LOD	39.54	< LOD	8.46
942	942	20/06/2023 9:40	Soil	30.9	ppm	2	Final				XS060																											78.92	9.41	41.58	10.67	< LOD	27.45	< LOD	11.12
943	943	20/06/2023 9:45	Soil	31.02	ppm	2	Final				SIO2_06																											< LOD	3.06	7.88	4.14	< LOD	12.44	< LOD	2.68
944	944	20/06/2023 9:46	Soil	31.29	ppm	2	Final				RCRA_06																											462.17	15.95	48.91	6.87	22.4	10.61	470.83	15.87
945	945	20/06/2023 9:52	Soil	30.93	ppm	2	Final				XS061																											20.37	6.74	84.65	13.81	< LOD	31.07	< LOD	8.39
946	946	20/06/2023 9:55	Soil	31.3	ppm	2	Final				XS062																											26.43	6.19	41.95	9.54	< LOD	24.24	< LOD	7.36
947	947	20/06/2023 9:58	Soil	30.94	ppm	2	Final				XS063																											12.66	8.12	27.69	15.71	< LOD	45.39	< LOD	10.59
948	948	20/06/2023 10:00	Soil	31.31	ppm	2	Final				XS064																											< LOD	5.95	42	7.32	< LOD	17.64	< LOD	4.97
949	949	20/06/2023 10:03	Soil	31.31	ppm	2	Final				XS065																											33.21	8.79	37.7	14.46	44.21	27.35	< LOD	10.45
950	950	20/06/2023 10:05	Soil	31.31	ppm	2	Final				XS066																											< LOD	11.04	< LOD	24.08	< LOD	56.21	< LOD	9.44
951	951	20/06/2023 10:08	Soil	31.29	ppm	2	Final				XS067																											< LOD	18.03	75.8	32.24	< LOD	87.69	< LOD	15.2
952	952	20/06/2023 10:10	Soil	31.41	ppm	2	Final				XS068																											< LOD	11.62	< LOD	27.91	< LOD	65.01	15.38	7.6
953	953	20/06/2023 10:13	Soil	30.89	ppm	2	Final				XS069																											< LOD	6.51	42.25	9.11	< LOD	22.15	< LOD	5.21
954	954	20/06/2023 10:16	Soil	30.94	ppm	2	Final				XS070																											30.81	7.95	30.95	12.4	< LOD	34.83	< LOD	9.64
955	955	20/06/2023 10:18	Soil	31.46	ppm	2	Final				SIO2_07																											< LOD	3.14	< LOD	6.08	< LOD	12.09	< LOD	2.64
956	956	20/06/2023 10:20	Soil	30.85	ppm	2	Final				RCRA_07																											469.82	16.22	47.83	7.04	18.63	10.65	451.18	15.95
957	957	20/06/2023 10:23	Soil	31.54	ppm	2	Final				XS071																											< LOD	29.97	< LOD	63.24	< LOD	170.99	< LOD	26.6
958	958	20/06/2023 10:25	Soil	30.85	ppm	2	Final				XS072																											24.33	6.23	27.38	9	< LOD	23.93	< LOD	7.46
959	959	20/06/2023 11:20	Soil	30.85	ppm	2	Final				XS073																											61.55	7.47	284.09	16.03	45.99	14.19	< LOD	8.83
960	960	20/06/2023 11:24	Soil	30.91	ppm	2	Final				XS074																											31.74	5.66	88.33	9.75	21.46	13.42	< LOD	6.64
961	961	20/06/2023 11:26	Soil	30.94	ppm	2	Final				XS075																											34.18	7.96	138	16.55	38.92	22.67	< LOD	9.68
962	962	20/06/2023 11:28	Soil	31.26	ppm	2	Final				XS076																											27.81	6.16	110.11	12.06	< LOD	24.19	11.3	5.3
963	963	20/06/2023 11:31	Soil	30.89	ppm	2	Final				XS077																											48.83	9.1	218.25	19.94	43.38	23.98	< LOD	11.16
964	964	20/06/2023 11:34	Soil	31.32	ppm	2	Final				XS078																											71.85	6.98	253.69	13.59	24.93	12.38	11.84	5.72
965	965	20/06/2023 11:37	Soil	31.31	ppm	2	Final				XS079																											< LOD	7.2	42.05	11.89	35	21.17	< LOD	6.24
966	966	20/06/2023 11:43	Soil	31.48	ppm	2	Final				DRAIN SED01																											27.86	15.41	< LOD	46.42	< LOD	106.67	< LOD	18.4
967	967	20/06/2023 11:46	Soil	30.92	ppm	2	Final				XS080																											104.03	7.81	364.96	15.5	47.16	12.55	< LOD	9.19
968	968	20/06/2023 11:49	Soil	31.36	ppm	2	Final				SIO2_08																											< LOD	3.02	9.76	4.16	< LOD	11.96	< LOD	2.57
969	969	20/06/2023 11:50	Soil	30.88	ppm	2	Final				RCRA_08																											463.83	16.16	50.51	7.11	17.98	10.59	471.92	16.09
970	970	20/06/2023 11:55	Soil	0.15	ppm	2	Final				XS081																											< LOD	59.82	< LOD	283.72	< LOD	165.93	< LOD	9.02
971	971	20/06/2023 12:00	Soil	31.11	ppm	2	Final				XS081																											< LOD	12.3	< LOD	29.87	< LOD	64.02	< LOD	10.42
972	972	20/06/2023 12:03	Soil	30.9	ppm	2	Final				XS082																											72.41	10	132.39	16.19	< LOD	32.93	< LOD	11.68
973	973	20/06/2023 12:06	Soil	30.91	ppm	2	Final				XS083																											36.44	5.97	119.21	10.83	< LOD	19.91	< LOD	7.17
974	974	20/06/2023 12:09	Soil	30.92	ppm	2	Final				XS084																											27.85	8.11	185.57	19.85	< LOD	38.03	< LOD	9.95
975	975	20/06/2023 12:12	Soil	30.89	ppm	2	Final				XS085																											14.37	6	44.27	11.1	< LOD	28.32	< LOD	7.69
976	976	20/06/2023 12:16	Soil	30.91	ppm	2	Final				XS086																											38.4	6.78	152.03	13.67	< LOD	23.97	< LOD	8.39
977	977	20/06/2023 12:18	Soil	30.92	ppm	2	Final				XS087																											24.65	4.48	81.3	7.75	< LOD	14.48	< LOD	5.32
978	978	20/06/2023 12:20	Soil	30.9	ppm	2	Final				XS088																											72.29	11.2	293.85	24.38	< LOD	39.83	< LOD	13.31
979	979	20/06/2023 12:25	Soil	9.01	ppm	2	Final				XS088																											< LOD	28.02	282.97	71.71	< LOD	152.98	< LOD	27.87
980	980	20/06/2023 12:26	Soil	30.95	ppm	2	Final				XS089																											16.34	7.12	448.19	27.12	49.49	25.1	< LOD	9.1
981	981	20/06/2023 12:28	Soil	30.86	ppm	2	Final				XS090																											51.64	6.94	286.95	16.2	25.92	14.97	< LOD	8.21
982	982	20/06/2023 12:34	Soil	30.97	ppm	2	Final				SIO2_09																											< LOD	3.11	< LOD	6.14	< LOD	12.04	< LOD	2.77
983	983	20/06/2023 12:35	Soil	31.32	ppm	2	Final				RCRA_09																											470.58	16.16	47.84	6.98	17.39	10.54	453.1	15.92
984	984	20/06/2023 12:45	Soil	30.95	ppm	2	Final				XS091																											59.75	9.06	138.89	15.84	< LOD	31.25	< LOD	10.69

Index	Reading Nc	Time	Type	Duration	Units	Sigma Valu	Sequence	Res	EScale	Shape Tim	SAMPLE	LOCATION	INSPECTOF	MISC	NOTE	Flags	COR 1	COR 2	LATITUDE i	LONGITUD	ALTITUDE	Results	Action Lev	UPC	Brand	Sample	Name	Part	Color	Inspector	Misc 1	Misc 2	User1	USER1	HEAT	LOT	BATCH	Pb	Pb Error	Zn	Zn Error	Cu	Cu Error	As	As Error
985	985	20/06/2023 12:48	Soil	30.84	ppm	2	Final				XS092																											65.16	6.83	799.82	23.16	22.08	12.69	< LOD	8.13
986	986	20/06/2023 12:50	Soil	30.87	ppm	2	Final				XS093																											65.71	8.2	146.89	13.64	< LOD	24.92	< LOD	9.82
987	987	20/06/2023 13:18	Soil	31.59	ppm	2	Final				XS094																											45.92	25.07	126.16	50.5	< LOD	99.72	< LOD	28.71
988	988	20/06/2023 13:21	Soil	30.92	ppm	2	Final				XS095																											30.04	18.16	< LOD	57.77	< LOD	124.07	< LOD	21.9
989	989	20/06/2023 13:23	Soil	30.95	ppm	2	Final				XS096																											57.69	8.02	106.37	12.76	< LOD	26.06	< LOD	9.44
990	990	20/06/2023 13:25	Soil	30.88	ppm	2	Final				XS097																											49.59	6.78	91.98	10.5	37.94	14.82	< LOD	8.27
991	991	20/06/2023 13:28	Soil	30.9	ppm	2	Final				XS098																											10.16	5.23	73.83	11.18	27.27	17.06	< LOD	6.53
992	992	20/06/2023 13:30	Soil	30.88	ppm	2	Final				XS099																											24.08	6.88	66.93	12.62	38.22	20.78	< LOD	8.32
993	993	20/06/2023 13:33	Soil	30.91	ppm	2	Final				XS100																											99.81	8.34	172.31	12.3	27.1	13.39	< LOD	9.99
994	994	20/06/2023 13:42	Soil	30.89	ppm	2	Final				SIO2_10																											< LOD	3.28	< LOD	6.1	< LOD	12.07	< LOD	2.68
995	995	20/06/2023 13:43	Soil	30.89	ppm	2	Final				RCRA_10																											475.55	16.45	48.92	7.16	< LOD	15.53	444.15	16.1
996	996	20/06/2023 13:47	Soil	30.98	ppm	2	Final				XS101																											< LOD	3.89	154.08	9.54	< LOD	14.44	< LOD	3.26
997	997	20/06/2023 13:49	Soil	30.92	ppm	2	Final				XS102																											< LOD	3.01	107.48	6.73	< LOD	10.16	< LOD	2.46
998	998	20/06/2023 13:51	Soil	30.9	ppm	2	Final				XS103																											14.68	9.32	< LOD	29.28	< LOD	56.01	< LOD	11.37
999	999	20/06/2023 13:53	Soil	31.02	ppm	2	Final				XS104																											< LOD	12.31	42.55	17.46	< LOD	48.74	< LOD	9.99
1000	1000	20/06/2023 13:55	Soil	30.94	ppm	2	Final				XS105																											< LOD	12.87	< LOD	28.93	< LOD	59.64	< LOD	11.19
1001	1001	20/06/2023 13:58	Soil	30.9	ppm	2	Final				XS106																											30.37	8.33	89.73	16.19	< LOD	36.46	< LOD	9.68
1002	1002	20/06/2023 14:00	Soil	30.91	ppm	2	Final				XS107																											16.83	6.39	106.48	14.16	< LOD	30.06	< LOD	7.79
1003	1003	20/06/2023 14:02	Soil	30.84	ppm	2	Final				XS108																											27.72	6.78	99.49	12.98	< LOD	26.49	< LOD	8.34
1004	1004	20/06/2023 14:43	Soil	30.92	ppm	2	Final				XS109																											< LOD	11.16	24.6	13.99	< LOD	36.28	< LOD	9.08
1005	1005	20/06/2023 14:46	Soil	30.84	ppm	2	Final				XS110																											< LOD	6.4	200.65	14.03	43.85	15.43	< LOD	5.42
1006	1006	20/06/2023 14:48	Soil	30.93	ppm	2	Final				SIO2_11																											< LOD	3.24	9.62	4.28	< LOD	11.98	< LOD	2.7
1007	1007	20/06/2023 14:49	Soil	30.88	ppm	2	Final				RCRA_11																											463.46	16.03	41.27	6.64	16.14	10.45	455.11	15.85
1008	1008	20/06/2023 14:55	Soil	31.22	ppm	2	Final				XS111																											19.94	4.16	295.48	12.49	15.31	9.43	6.29	3.48
1009	1009	20/06/2023 14:57	Soil	30.5	ppm	2	Final				XS112																											43.48	6.01	85.84	9.18	< LOD	18.36	< LOD	7.15
1010	1010	20/06/2023 15:00	Soil	30.55	ppm	2	Final				XS113																											21.27	5.75	49.43	9.5	< LOD	23.16	< LOD	6.78
1011	1011	20/06/2023 15:02	Soil	30.88	ppm	2	Final				XS114																											39.92	9.06	87.25	16.1	< LOD	37.13	< LOD	11.17
1012	1012	20/06/2023 15:04	Soil	30.5	ppm	2	Final				XS115																											12.81	4.75	51.7	8.56	< LOD	19.76	< LOD	5.86
1013	1013	20/06/2023 15:07	Soil	30.53	ppm	2	Final				XS116																											< LOD	12.14	59.99	19.1	< LOD	49.84	< LOD	10.05
1014	1014	20/06/2023 15:10	Soil	30.49	ppm	2	Final				XS117																											15.54	8.51	32.34	16.88	< LOD	47.4	< LOD	10.02
1015	1015	20/06/2023 15:12	Soil	30.9	ppm	2	Final				XS118																											< LOD	12.64	< LOD	31.39	< LOD	73.2	< LOD	10.87
1016	1016	20/06/2023 15:20	Soil	30.86	ppm	2	Final				XS119																											11.08	6.6	160.95	17.69	< LOD	33.63	< LOD	8.53
1017	1017	20/06/2023 15:23	Soil	30.9	ppm	2	Final				XS120																											27.13	5.2	107.27	9.87	< LOD	18.08	< LOD	6.28
1018	1018	20/06/2023 15:26	Soil	31.08	ppm	2	Final				SIO2_12																											< LOD	2.93	6.73	4.13	< LOD	11.87	< LOD	2.62
1019	1019	20/06/2023 15:27	Soil	30.89	ppm	2	Final				RCRA_12																											460.15	16.09	49.07	7.02	24.61	10.83	454.58	15.92
1020	1020	20/06/2023 15:33	Soil	30.91	ppm	2	Final				XS121																											< LOD	4.49	157.97	9.2	16.68	9.18	3.89	2.56
1021	1021	20/06/2023 15:36	Soil	30.88	ppm	2	Final				XS122																											12.13	4.42	199.14	12.43	< LOD	17.92	< LOD	5.29
1022	1022	20/06/2023 15:38	Soil	30.93	ppm	2	Final				XS123																											10.71	3.62	106.61	7.97	24.45	9.47	< LOD	4.45
1023	1023	20/06/2023 15:40	Soil	30.89	ppm	2	Final				XS124																											< LOD	6.4	43.62	8.16	< LOD	19.85	< LOD	5.38
1024	1024	20/06/2023 15:42	Soil	30.92	ppm	2	Final				XS125																											< LOD	6.06	68.18	8.88	< LOD	19.17	< LOD	5.18
1025	1025	20/06/2023 15:44	Soil	30.85	ppm	2	Final				XS126																											< LOD	8.92	33.34	12.31	< LOD	33.83	< LOD	7.28
1026	1026	20/06/2023 15:46	Soil	30.92	ppm	2	Final				XS127																											< LOD	10.8	41.59	16.61	< LOD	45.03	< LOD	9.01
1027	1027	20/06/2023 15:48	Soil	30.88	ppm	2	Final				XS128																											13.09	3.73	132.5	8.53	< LOD	13.09	5.35	3.11
1028	1028	20/06/2023 15:50	Soil	30.92	ppm	2	Final				XS129																											< LOD	10.93	32.21	15.01	< LOD	41.52	< LOD	9.4
1029	1029	20/06/2023 15:53	Soil	30.88	ppm	2	Final				XS130																											19.91	4.85	233.29	13.18	22.52	12.33	< LOD	5.89
1030	1030	20/06/2023 15:56	Soil	30.93	ppm	2	Final				SIO2_13																											< LOD	3.1	8.98	4.23	< LOD	12.2	< LOD	2.65
1031	1031	20/06/2023 15:57	Soil	30.92	ppm	2	Final				RCRA_13																											467.73	16.39	47.87	7.11	19.93	10.73	464.22	16.21
1032	1032	20/06/2023 16:04	Soil	30.96	ppm	2	Final				XS131																											15.83	8.73	25.13	16.73	< LOD	48.51	< LOD	11.06
1033	1033	20/06/2023 16:06	Soil	31.37	ppm	2	Final				XS132																											< LOD	23.65	< LOD	55.83	< LOD	132.65	< LOD	21.36
1034	1034	20/06/2023 16:08	Soil	30.89	ppm	2	Final				XS133																											26.03	10.47	50.44	20.88	< LOD	57.56	< LOD	12.79
1035	1035	20/06/2023 16:11	Soil	30.89	ppm	2	Final				XS134																											< LOD	13.66	< LOD	26.74	< LOD	55.92	< LOD	11.69
1036	1036	20/06/2023 16:13	Soil	27.32	ppm	2	Final				XS135																											13.35	8.51	73.28	18.84	< LOD	47.34	< LOD	10.51
1037	1037	20/06/2023 16:15	Soil	31.39	ppm	2	Final				XS136																											< LOD	7.75	30.46	12	< LOD	32.6	< LOD	6.57
1038	1038	20/06/2023 16:17	Soil	31.24	ppm	2	Final				XS137																											27.78	10.59	52.98	20.83	< LOD	58.06	< LOD	13.07
1039	1039	20/06/2023 16:19	Soil	30.86	ppm	2	Final				XS138																											< LOD	10.56	< LOD	24.79	< LOD	52.46	< LOD	9.13
1040	1040	20/06/2023 16:22	Soil	31.9	ppm	2	Final				XS139																											< LOD	9.72	< LOD	17.82	< LOD	38.59	< LOD	8.12
1041	1041	20/06/2023 16:25	Soil	30.9	ppm	2	Final				XS140																											17.95	7.28	132.02	17.37	37.34	24.57	< LOD	8.75
1042	1042	20/06/2023 16:30	Soil	31.03	ppm	2	Final				SIO2_14																											< LOD	3.15	< LOD	6.12	< LOD	12	< LOD	2.66
1043	1043	20/06/2023 16:31	Soil	30.89	ppm	2	Final				RCRA_14																											456.41	15.92	48.88	6.95	17.78	10.51	458.59	15.79
1044	1044	20/06/2023 16:38	Soil	31.11	ppm	2	Final				XS141																											< LOD	14.34	< LOD	35.24	< LOD	76.71	< LOD	12.04
1045	1045	20/06/2023 16:40	Soil	31.08	ppm	2	Final				XS142																											< LOD	12.87	< LOD	32.18	< LOD	67.63	< LOD	11.65
1046	1046	20/06/2023 16:42	Soil	30.43	ppm	2	Final				XS143																											21.87	9.62	< LOD	26.32	337.8	45.08	< LOD	12.02
1047	1047	20/06/2023 16:44	Soil	30.84	ppm	2	Final				XS144																											12.81	5	106.75	11.24	< LOD	21.82	< LOD	6.13
1048	1048	21/06/2023 7:18	System Che	51.38	cps	2	Final	181.41	7.4	1																																			
1049	1049	21/06/2023 7:19	System Che	55.94	cps	2	Final	162.48	7.4	4																																			
1050	1050	21/06/2023 7:26	Soil	31.27	ppm	2	Final				XS145																											< LOD	6.07	59.5	8.64	< LOD	19.94	< LOD	4.96
1051	1051	21/06/2023 7:28	Soil	0.54	ppm	2	Final				XS146																											< LOD	1439.79	< LOD	19964.13	< LOD	14728.89	< LOD	515.94
1052	1052	21/06/2023 7:29	Soil	30.92	ppm	2	Final				XS146																											< LOD	8.97	< LOD	25.49	< LOD	53.73	< LOD	8.11
1053	1053	21/06/2023 7:32	Soil	30.71	ppm	2	Final				XS147																											< LOD	11.65	< LOD	32.26	87.32	46.02	< LOD	10.06
1054	1054	21/06/2023 7:36	Soil	30.92	ppm	2	Final				XS148																											< LOD	14.73	< LOD	40	< LOD	86.63	< LOD	12.48
1055	1055	21/06/2023 7:38	Soil	30.92	ppm	2	Final				XS149																											10.2	5.39	187.3	15.49	34.13	18.07	< LOD	6.53
1056	1056	21/06/2023 7:41	Soil	30.94	ppm	2	Final				XS150																											< LOD	12.83	159.47	28.04	< LOD	65.03	< LOD	11.01
1057	1057	21/06/2023 7:46	Soil	31.07	ppm	2	Final				SIO2_15																											< LOD	2.84	14.14	4.11	< LOD	11	< LOD	2.38
1058	1058	21/06/2023 7:47	Soil	30.52	ppm	2	Final				RCRA_15																											465.62	16.07	47.21	6.88	23.67	10.74	461.91	15.93
1059	1059	21/06/2023 7:53	Soil	30.91	ppm	2	Final				XS151																											< LOD	20.67	< LOD	46.54	< LOD	102.26	< LOD	17.43
1060	1060	21/06/2023 7:56	Soil	30.89	ppm	2	Final				XS152																											< LOD	11.09	60.86	16.34	< LOD	42.52	< LOD	9.48
1061	1061	21/06/2023 7:59	Soil	30.92	ppm	2	Final				XS153																											< LOD	26.01	< LOD	67.18	< LOD	150.9	< LOD	22.82
1062	1062	21/06/2023 8:02	Soil	31	ppm	2	Final				XS154																											< LOD	33.56	< LOD	100.79	< LOD	202.96	< LOD	30.57
1063	1063	21/06/2023 8:05	Soil	31.03	ppm	2	Final				XS155																											86.12	24.15	148.31	50.92	< LOD	134.13	31.44	20.94
1064	1064	21/06/2023 8:13	Soil	30.94	ppm	2	Final				XS156																											< LOD	12.58	< LOD	28.79	< LOD	58.35	< LOD	10.55
1065	1065	21/06/2023 8:16	Soil	31.15	ppm	2	Final				XS157																											< LOD	10.26	< LOD	26.63	< LOD	58.27	< LOD	9.45
1066	1066	21/06/2023 8:18	Soil	30.94	ppm	2	Final				XS158																											< LOD	11.8	41.24	21.15	< LOD	61.35	13.62	7.54
1067	1067	21/06/2023 8:21	Soil	30.91	ppm	2	Final				XS159																											< LOD	16.05	< LOD	36.87	< LOD	84.93	< LOD	14.26
1068	1068	21/06/2023 8:24	Soil	30.68	ppm	2	Final				XS160																											< LOD	11.07	< LOD	23.37	< LOD	47.23	< LOD	9.66
1069	1069	21/06/2023 8:27	Soil	30.52	ppm	2	Final				SIO2_16																											< LOD	3.17	8.27	4.16	< LOD	12.44	< LOD	2.66
1070	1070	21/06/2023 8:28	Soil	30.5	ppm	2	Final				RCRA_16																											405.94	14.75	48.29	6.7	21.5	10.23	415.55	14.69
1071	1071	21/06/2023 8:50	Soil	30.93	ppm	2	Final				XS161																											26.74	6.77	163.99	15.59	< LOD	27.67	< LOD	7.81
1072	1072	21/06/2023 8:52	Soil	30.54	ppm	2	Final				XS162																											< LOD	12.48	183.22	26.47	< LOD	57.09	< LOD	10.84
1073	1073	21/06/2023 8:55	Soil	30.95	ppm	2	Final				XS163																											35.83	6.41	121.1	12.07	40.47	16.01	< LOD	7.81
1074	1074	21/06/2023 8:58	Soil	30.92	ppm	2	Final				XS164																											< LOD	11.9	< LOD	30.81	75.54	50.06	< LOD	10.92
1075	1075	21/06/2023 9:01	Soil	30.51	ppm	2	Final				XS165																											123.95	25.6	< LOD	53.8	< LOD	118.92	< LOD	29.94
1076	1076	21/06/2023 9:04	Soil	31.73	ppm	2	Final				XS166																											52.72	8.04	78.03	12.15	< LOD	27.27	14.38	6.77
1077	1077	21/06/2023 9:07	Soil	31.06	ppm	2	Final				XS167																											< LOD	21.16	< LOD	49.09	< LOD	112.95	< LOD	18.16
1078	1078	21/06/2023 9:10	Soil	30.95	ppm	2	Final				XS168.																											13.69	5.6	68.13	11.16	< LOD	26.04	< LOD	6.93
1079	1079	21/06/2023 9:12	Soil	30.93	ppm	2	Final				XS169																											13.15	6.95	52.49	13.83	< LOD	36.12	11.73	6.14
1080	1080	21/06/2023 9:16	Soil	31	ppm	2	Final				XS170																											< LOD	10.22	< LOD	27.42	< LOD	56.07	< LOD	9.07
1081	1081	21/06/2023 9:19	Soil	30.54	ppm	2	Final				SIO2_17																											< LOD	3.12	7.89	4.05	< LOD	11.59	< LOD	2.61
1082	1082	21/06/2023 9:20	Soil	30.53	ppm	2	Final				RCRA_17																											440.59	16.1	46.93	7.01	< LOD	16.02	473.38	16.18
1083	1083	21/06/2023 9:24	Soil	30.51	ppm	2	Final				XS171																											90.66	12.47	154.97	20.4	< LOD	42.43	< LOD	15.43
1084	1084	21/06/2023 9:27	Soil	30.44	ppm	2	Final				XS172																											< LOD	30.89	< LOD	85.7	< LOD	210.85	< LOD	30.54
1085	1085	21/06/2023 9:30	Soil	30.44	ppm	2	Final				XS173																											< LOD	17.43	72.14	32.09	< LOD	88.81	< LOD	14.85
1086	1086	21/06/2023 9:32	Soil	30.86	ppm	2	Final				XS174																											< LOD	23.74	< LOD	69.85	< LOD	137.53	23.32	15.24
1087	1087	21/06/2023 9:35	Soil	30.54	ppm	2	Final				XS175																											< LOD	25.95	< LOD	65.17	< LOD	142.85	< LOD	22.7
1088	1088	21/06/2023 9:38	Soil	0.15	ppm	2	Final				XS176																											< LOD	623.19	< LOD	3030.73	< LOD	2366.28	< LOD	70646
1089	1089	21/06/2023 9:39	Soil	30.84	ppm	2	Final				XS176																											44.6	13.89	111.88	29.44	< LOD	73.01	< LOD	16.47
1090	1090	21/06/2023 9:42	Soil	30.52	ppm	2	Final				XS177																											25.86	5.77	287.34	16.41	23.57	14.98	< LOD	7.19
1091	1091	21/06/2023 9:45	Soil	31.06	ppm	2	Final				XS178																											< LOD	23.75	< LOD	66.11	< LOD	155.49	< LOD	20.22
1092	1092	21/06/2023 9:48	Soil	30.97	ppm	2	Final				XS179																											37.34	14.89	149.71	35.89	< LOD	84.96	< LOD	18.42
1093	1093	21/06/2023 9:51	Soil	30.9	ppm	2	Final				XS180																											< LOD	21.87	< LOD	71.32	< LOD	146.26	21.8	14.46
1094	1094	21/06/2023 9:54	Soil	30.97	ppm	2	Final				SIO2_18																											< LOD	3	< LOD	5.96	< LOD	11.71	< LOD	2.6
1095	1095	21/06/2023 9:56	Soil	30.46	ppm	2	Final				RCRA_18																											465.51	16.22	49.13	7.08	16.68	10.61	456.15	16.05
1096	1096	21/06/2023 10:46	Soil	30.55	ppm	2	Final				XS181																											< LOD	24.41	173.79	58.06	< LOD	121.23	< LOD	19.1
1097	1097	21/06/2023 10:48	Soil	31.11	ppm	2	Final				XS182																											< LOD	32.08	< LOD	77.93	< LOD	191.31	< LOD	26.7
1098	1098	21/06/2023 10:51	Soil	30.84	ppm	2	Final				XS183																											18.5	7.69	111.76	17.73	< LOD	39.6	< LOD	9.55
1099	1099	21/06/2023 10:53	Soil	30.5	ppm	2	Final				XS184																											< LOD	11.36	< LOD	27.23	< LOD	57.36	< LOD	9.42
1100	1100	21/06/2023 10:56	Soil	30.48	ppm	2	Final				XS185																											32.68	7.35	96.76	13.65	31.32	19.97	< LOD	8.86

Index	Reading Nc	Time	Type	Duration	Units	Sigma Valu	Sequence	Res	EScale	Shape Tim	SAMPLE	LOCATION	INSPECTOF	MISC	NOTE	Flags	COR 1	COR 2	LATITUDE	LONGITUD	ALTITUDE	Results	Action Lev	UPC	Brand	Sample	Name	Part	Color	Inspector	Misc 1	Misc 2	User1	USER1	HEAT	LOT	BATCH	Pb	Pb Error	Zn	Zn Error	Cu	Cu Error	As	As Error
1101	1101	21/06/2023 10:58	Soil	30.92	ppm	2	Final				XS186																											43.91	6.52	116.32	11.31	30.33	14.68	9.09	5.41
1102	1102	21/06/2023 11:01	Soil	30.9	ppm	2	Final				XS187																											23.34	8.03	34.32	13.98	< LOD	39.42	< LOD	9.45
1103	1103	21/06/2023 11:03	Soil	30.99	ppm	2	Final				XS188																											< LOD	15.81	< LOD	40.97	< LOD	89.72	< LOD	14.95
1104	1104	21/06/2023 11:05	Soil	30.46	ppm	2	Final				XS189																											15.42	8.93	< LOD	26.06	< LOD	50.72	< LOD	11.34
1105	1105	21/06/2023 11:10	Soil	30.9	ppm	2	Final				XS190																											22.94	7.8	138.45	18.15	< LOD	37.67	< LOD	9.39
1106	1106	21/06/2023 11:12	Soil	30.9	ppm	2	Final				SIO2_19																											< LOD	3.21	7.5	4.12	< LOD	12.18	< LOD	2.76
1107	1107	21/06/2023 11:13	Soil	30.51	ppm	2	Final				RCRA_19																											459.84	16.23	46.25	6.99	< LOD	15.68	461.98	16.11
1108	1108	21/06/2023 11:16	Soil	31	ppm	2	Final				XS191																											10.05	4.03	76.53	8.14	22.16	11.24	< LOD	5.07
1109	1109	21/06/2023 11:19	Soil	31.14	ppm	2	Final				XS192																											< LOD	12.99	< LOD	26.25	< LOD	56.23	< LOD	10.94
1110	1110	21/06/2023 11:21	Soil	30.51	ppm	2	Final				XS193																											< LOD	8.98	106.85	14.64	< LOD	31.47	< LOD	7.63
1111	1111	21/06/2023 11:23	Soil	30.91	ppm	2	Final				XS194																											< LOD	7.27	52.97	13.02	36.04	22.81	< LOD	6.57
1112	1112	21/06/2023 11:25	Soil	31.02	ppm	2	Final				XS195																											70.67	25.77	< LOD	74.42	< LOD	159.92	< LOD	31.61
1113	1113	21/06/2023 11:27	Soil	30.95	ppm	2	Final				XS196																											110	17.73	62.8	24.98	< LOD	66.98	< LOD	21.74
1114	1114	21/06/2023 11:29	Soil	30.51	ppm	2	Final				XS197																											83.13	17.36	< LOD	39.32	< LOD	76.08	< LOD	20.56
1115	1115	21/06/2023 11:31	Soil	30.9	ppm	2	Final				XS198																											98.66	23.64	< LOD	58.84	< LOD	117.48	< LOD	29
1116	1116	21/06/2023 11:33	Soil	30.92	ppm	2	Final				XS199																											70.87	19.34	< LOD	51.89	< LOD	98.87	< LOD	24.26
1117	1117	21/06/2023 11:35	Soil	30.91	ppm	2	Final				XS200																											26	7.93	76.78	15.22	< LOD	37.44	< LOD	9.79
1118	1118	21/06/2023 11:37	Soil	30.54	ppm	2	Final				SIO2_20																											< LOD	3.19	7.73	4.22	< LOD	12.4	< LOD	2.72
1119	1119	21/06/2023 11:38	Soil	30.92	ppm	2	Final				RCRA_20																											458.26	15.92	51.9	7.04	17.9	10.52	465.41	15.83
1120	1120	21/06/2023 11:41	Soil	31.43	ppm	2	Final				XS201																											< LOD	20.03	< LOD	50.04	110.42	66.71	< LOD	17.98
1121	1121	21/06/2023 11:52	Soil	31.01	ppm	2	Final				XS202																											< LOD	27.63	< LOD	73.74	< LOD	153.98	< LOD	23.19
1122	1122	21/06/2023 11:54	Soil	31	ppm	2	Final				XS203																											28.03	10.66	163.1	26.31	< LOD	57.84	< LOD	13.1
1123	1123	21/06/2023 11:56	Soil	30.56	ppm	2	Final				XS204																											< LOD	12.5	107.09	20.9	< LOD	49.9	< LOD	10.47
1124	1124	21/06/2023 11:58	Soil	30.92	ppm	2	Final				XS205																											35.22	14.6	73.36	31.61	< LOD	89.2	< LOD	17.51
1125	1125	21/06/2023 12:00	Soil	30.91	ppm	2	Final				XS206																											32.79	11.68	119.78	26.23	< LOD	63.85	< LOD	15.12
1126	1126	21/06/2023 12:02	Soil	30.91	ppm	2	Final				XS207																											26.73	4.27	234.85	10.76	35.18	9.52	6.96	3.54
1127	1127	21/06/2023 12:05	Soil	30.91	ppm	2	Final				XS208																											< LOD	16.94	< LOD	46.1	< LOD	98.95	22.24	11.31
1128	1128	21/06/2023 12:07	Soil	31.07	ppm	2	Final				XS209																											13.87	8.61	41.57	18	< LOD	49.4	< LOD	11.32
1129	1129	21/06/2023 12:09	Soil	30.95	ppm	2	Final				XS210																											< LOD	8.37	86.55	12.72	< LOD	27.87	< LOD	7.13
1130	1130	21/06/2023 12:11	Soil	30.66	ppm	2	Final				SIO2_21																											< LOD	3.35	6.94	4.2	< LOD	12.33	< LOD	2.77
1131	1131	21/06/2023 12:12	Soil	30.45	ppm	2	Final				RCRA_21																											467.06	16.49	49.74	7.27	27.4	11.19	446.6	16.22
1132	1132	21/06/2023 12:39	Soil	31.05	ppm	2	Final				bitumen1																											< LOD	12.01	49.39	21.97	< LOD	60.27	< LOD	10.49
1133	1133	21/06/2023 13:36	Soil	30.97	ppm	2	Final				XS220																											< LOD	27.92	< LOD	73.08	< LOD	125.81	< LOD	26.76
1134	1134	21/06/2023 13:40	Soil	30.98	ppm	2	Final				XS221																											< LOD	28.13	< LOD	96.57	< LOD	247.14	43.87	22.11
1135	1135	21/06/2023 13:42	Soil	31.07	ppm	2	Final				XS222																											< LOD	11.85	< LOD	27.55	< LOD	56.17	< LOD	10.48
1136	1136	21/06/2023 13:44	Soil	32.5	ppm	2	Final				XS223																											9.38	4.96	70.13	10.29	25.06	15.75	< LOD	6.18
1137	1137	21/06/2023 13:46	Soil	31.03	ppm	2	Final				XS224																											< LOD	12.54	< LOD	27.91	< LOD	59.11	12.04	7.66
1138	1138	21/06/2023 13:48	Soil	30.92	ppm	2	Final				XS225																											< LOD	9.94	< LOD	22.31	< LOD	45.29	< LOD	8.87
1139	1139	21/06/2023 13:50	Soil	30.94	ppm	2	Final				XS226																											< LOD	16.99	< LOD	36.01	< LOD	80.42	< LOD	14.04
1140	1140	21/06/2023 13:54	Soil	30.95	ppm	2	Final				XS227																											< LOD	10.64	< LOD	23.21	< LOD	44.83	< LOD	8.81
1141	1141	21/06/2023 13:59	Soil	30.99	ppm	2	Final				XS228																											< LOD	7.93	85.02	13.14	< LOD	29.02	< LOD	6.73
1142	1142	21/06/2023 14:03	Soil	30.9	ppm	2	Final				XS229																											< LOD	9.23	67.67	13.52	55.85	23.02	10.01	5.44
1143	1143	21/06/2023 14:05	Soil	30.98	ppm	2	Final				XS230																											< LOD	8.64	22.37	10.2	41.11	20.43	< LOD	6.75
1144	1144	21/06/2023 14:07	Soil	30.93	ppm	2	Final				SIO2_22																											< LOD	3.37	< LOD	6.14	< LOD	12.17	< LOD	2.63
1145	1145	21/06/2023 14:09	Soil	30.94	ppm	2	Final				RCRA_22																											460.63	16.1	48.57	7.03	21.77	10.71	454.79	15.91
1146	1146	21/06/2023 14:12	Soil	30.93	ppm	2	Final				XS231																											< LOD	16.83	< LOD	52.68	< LOD	124.95	< LOD	14.85
1147	1147	21/06/2023 14:15	Soil	31	ppm	2	Final				XS232																											< LOD	10.9	47.35	17.21	56.61	32.45	< LOD	9.12
1148	1148	21/06/2023 14:17	Soil	31.05	ppm	2	Final				XS233																											< LOD	14.77	< LOD	36.97	< LOD	86.69	17.65	9.65

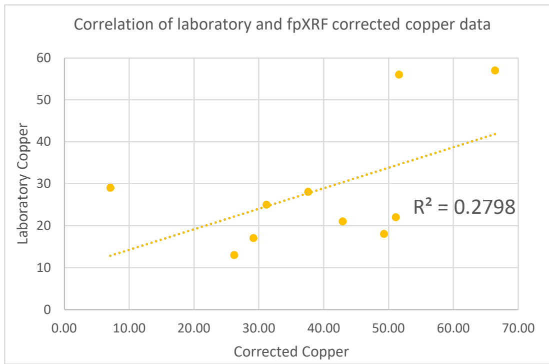
Appendix 4
fpXRF Correlation Data

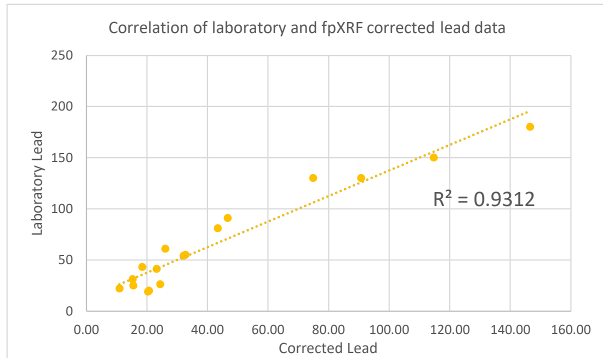
Client: ARTC
Job No: 318001660
Project Name: Goulburn Wheat Yards Assessment
7/09/2023

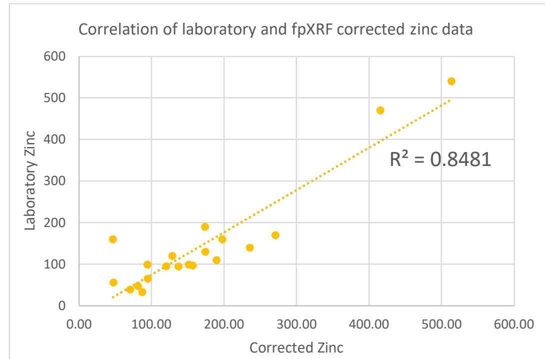
TABLE 1:
Correlation of laboratory and fpXRF data

Reading No:	Sample date:	Sample ID:	Project Name:	Road:	Moisture Content (dried @ 103°C)	Arsenic (raw fpXRF) (ppm)	Arsenic Corrected (ppm)	As Error	Arsenic (laboratory) (mg/kg)	Copper (raw fpXRF) (ppm)	Copper Corrected (ppm)	Cu Error	Copper (laboratory) (mg/kg)	Lead (raw fpXRF) (ppm)	Lead Corrected (ppm)	Pb Error	Lead (laboratory) (mg/kg)	Zinc (raw fpXRF) (ppm)	Zinc Corrected (ppm)	Zn Error	Zinc (laboratory) (mg/kg)
878	19/06/2023 15:10	XS008	Goulburn Wheat Yards Assessment	Sloane Street	13	< LOD	< LOD	6.3	15	< LOD	< LOD	21.71	25	13.44	15.45	5.08	25	76.11	87.48	10.04	33
894	19/06/2023 16:36	XS022	Goulburn Wheat Yards Assessment	Sloane Street	5.2	< LOD	< LOD	6.31	6.7	49.51	7.07	14.37	29	19.32	20.38	5.13	19	180.31	190.20	12.69	110
906	20/06/2023 7:45	XS030	Goulburn Wheat Yards Assessment	Sloane Street	21	< LOD	< LOD	7.04	3.5	38.94	49.29	18.41	18	12.09	15.30	5.61	31	108.7	137.59	13.08	94
917	20/06/2023 8:18	XS039	Goulburn Wheat Yards Assessment	Sloane Street	13	9.92	14.94	5.98	4.4	44.48	51.13	22.92	22	21.15	24.31	6.96	26	61.58	70.78	13.59	39
930	20/06/2023 9:01	XS050	Goulburn Wheat Yards Assessment	Sloane Street	24	6.09	31.58	3.61	9.6	< LOD	< LOD	16.48	13	14	18.42	4.25	43	91.59	120.51	8.74	95
942	20/06/2023 9:40	XS060	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	13	< LOD	< LOD	11.12	14	< LOD	< LOD	27.45	17	78.92	90.71	9.41	130	41.58	47.79	10.67	56
954	20/06/2023 10:16	XS070	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	34	< LOD	< LOD	9.64	7.3	< LOD	< LOD	34.83	23	30.81	46.68	7.95	91	30.95	46.89	12.4	160
967	20/06/2023 11:46	XS080	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	29	< LOD	< LOD	9.19	7.2	47.16	66.42	12.55	57	104.03	146.52	7.81	180	364.96	514.03	15.5	540
981	20/06/2023 12:28	XS090	Goulburn Wheat Yards Assessment	King Street	31	< LOD	< LOD	8.21	3.2	25.92	37.57	14.97	28	51.64	74.84	6.94	130	286.95	415.87	16.2	470
993	20/06/2023 13:33	XS100	Goulburn Wheat Yards Assessment	Cooma Avenue	13	< LOD	< LOD	9.99	4.5	27.1	31.15	13.39	25	99.81	114.72	8.34	150	172.31	198.06	12.3	160
1005	20/06/2023 14:46	XS110	Goulburn Wheat Yards Assessment	Lansdowne Street	15	< LOD	< LOD	5.42	2.7	43.85	51.59	15.43	56	< LOD	< LOD	6.4	22	200.65	236.06	14.03	140
1017	20/06/2023 15:23	XS120	Goulburn Wheat Yards Assessment	Sloane Street	17	< LOD	< LOD	6.28	5.2	< LOD	< LOD	18.08	16	27.13	32.69	5.2	55	107.27	129.24	9.87	120
1029	20/06/2023 15:53	XS130	Goulburn Wheat Yards Assessment	Sloane Street	14	< LOD	< LOD	5.89	3.1	22.52	26.19	12.33	13	19.91	23.15	4.85	41	233.29	271.27	13.18	170
1041	20/06/2023 16:25	XS140	Goulburn Wheat Yards Assessment	Sloane Street	13	< LOD	< LOD	8.75	3.8	37.34	42.92	24.57	21	17.95	20.63	7.28	20	132.02	151.75	17.37	99
1056	21/06/2023 7:41	XS150	Goulburn Wheat Yards Assessment	Sloane Street	8.6	< LOD	< LOD	11.01	8.9	< LOD	< LOD	65.03	67	< LOD	< LOD	12.83	68	159.47	174.47	28.04	130
1068	21/06/2023 8:24	XS160	Goulburn Wheat Yards Assessment	Sloane Street	18	< LOD	< LOD	9.66	4.6	< LOD	< LOD	47.23	18	< LOD	< LOD	11.07	18	< LOD	< LOD	23.37	47
1080	21/06/2023 9:16	XS170	Goulburn Wheat Yards Assessment	Sloane Street	16	< LOD	< LOD	9.07	3.1	< LOD	< LOD	56.07	15	< LOD	< LOD	10.22	28	< LOD	< LOD	27.42	98
1092	21/06/2023 9:48	XS179	Goulburn Wheat Yards Assessment	Sloane Street	14	< LOD	< LOD	18.42	4.9	< LOD	< LOD	84.96	28	37.34	43.42	14.89	81	149.71	174.08	35.89	190
1105	21/06/2023 11:10	XS190	Goulburn Wheat Yards Assessment	Finlay Road	12	< LOD	< LOD	9.39	11	< LOD	< LOD	37.67	24	22.94	26.07	7.8	61	138.45	157.33	18.15	97
1117	21/06/2023 11:35	XS200	Goulburn Wheat Yards Assessment	Sloane Street	19	< LOD	< LOD	9.79	12	< LOD	< LOD	37.44	27	26	32.10	7.93	54	76.78	94.79	15.22	99
1136	21/06/2023 13:44	XS223	Goulburn Wheat Yards Assessment	Sloane Street	14	< LOD	< LOD	6.18	6.9	25.06	29.14	15.75	17	9.38	10.91	4.96	22	70.13	81.55	10.29	47
1129	21/06/2023 12:09	XS210	Goulburn Wheat Yards Assessment	Sloane Street	8.9	< LOD	< LOD	7.13	11	< LOD	< LOD	27.87	27	< LOD	< LOD	8.37	29	86.55	95.01	12.72	65

Cu Correlation coefficient (R) 0.33 | Pb Correlation coefficient (R) 0.95 | Zn Correlation coefficient (R) 0.90







Appendix 5
Summary of Results

Client: ARTC
Job No: 318001660
Project Name: Goulburn Wheat Yards Assessment Offsite Lead Delineation
7/09/2023

TABLE 1:
Recreational C - Soil Sampling Results

Reading No:	Sample date:	Sample ID:	Project Name:	Road:	Sampling Method:	Sample Description	Average Moisture Content	Arsenic (ppm)	Arsenic Error	Arsenic Corrected (ppm)	Arsenic Lab (mg/kg)	Copper (ppm)	Copper Error (ppm)	Copper Corrected (ppm)	Copper Lab (mg/kg)	Lead (ppm)	Lead Error (ppm)	Lead Corrected (ppm)	Lead Lab (mg/kg)	Zinc (ppm)	Zinc Error	Zinc Corrected (ppm)	Zinc Lab (mg/kg)
NEPM 2013 HIL C Recreational										300				17000				600				30000	
NEPM 2013 EIL Residential /Public Open Space										100				95				1100				70	
871	19/06/2023 14:48	XS001	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown silty sand	16.6	< LOD	7.88	< LOD		< LOD	41.76	< LOD		< LOD	8.69	< LOD		< LOD	20.35	< LOD	
872	19/06/2023 14:51	XS002	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown silt	16.6	< LOD	15.8	< LOD		< LOD	93.01	< LOD		< LOD	17.27	< LOD		< LOD	42.07	< LOD	
873	19/06/2023 14:54	XS003	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown silt	16.6	9.41	4.88	11.28		< LOD	28.65	< LOD		< LOD	8.28	< LOD		51.40	11.40	61.63	
874	19/06/2023 14:57	XS004	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown silt, gravel	16.6	< LOD	7.06	< LOD		< LOD	30.51	< LOD		< LOD	8.41	< LOD		40.70	11.43	48.80	
875	19/06/2023 15:00	XS005	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Light brown silt	16.6	< LOD	8.92	< LOD		< LOD	34.79	< LOD		11.88	6.90	14.24		18.46	12.17	22.13	
876	19/06/2023 15:04	XS006	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Light brown silt with gravel	16.6	< LOD	17.17	< LOD		< LOD	106.19	< LOD		< LOD	19.77	< LOD		< LOD	43.41	< LOD	
877	19/06/2023 15:07	XS007	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown silt	16.6	15.77	7.76	18.91		< LOD	70.22	< LOD		< LOD	11.47	< LOD		< LOD	32.30	< LOD	
878	19/06/2023 15:10	XS008	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown gravelly silt,	13	< LOD	6.3	< LOD	15.00	< LOD	21.71	< LOD	25.00	13.44	5.08	15.45	25.00	76.11	10.04	87.48	33.00
879	19/06/2023 15:13	XS009	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown gravelly silt,	16.6	< LOD	17.43	< LOD		< LOD	113.36	< LOD		< LOD	19.77	< LOD		< LOD	51.96	< LOD	
880	19/06/2023 15:17	XS010	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown gravelly silt,	16.6	< LOD	10.66	< LOD		< LOD	52.42	< LOD		< LOD	12.48	< LOD		< LOD	26.71	< LOD	
883	19/06/2023 15:43	XS011	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown gravelly silt,	16.6	< LOD	9.6	< LOD		58.12	32.03	69.69		< LOD	11.29	< LOD		< LOD	23.09	< LOD	
884	19/06/2023 16:11	XS012	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown silt	16.6	14.65	6.93	17.57		< LOD	49.17	< LOD		< LOD	11.12	< LOD		63.67	18.96	76.34	
885	19/06/2023 16:14	XS013	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown silt	16.6	< LOD	7.9	< LOD		< LOD	41.07	< LOD		< LOD	8.69	< LOD		367.96	26.63	441.20	
886	19/06/2023 16:16	XS014	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown silt	16.6	< LOD	7.15	< LOD		< LOD	33.82	< LOD		< LOD	8.58	< LOD		119.79	16.53	143.63	
887	19/06/2023 16:18	XS015	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown silt	16.6	< LOD	7.06	< LOD		33.05	19.18	39.63		9.91	5.71	11.88		211.70	17.01	253.84	
888	19/06/2023 16:21	XS016	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown gravelly silt	16.6	< LOD	7.77	< LOD		< LOD	38.40	< LOD		< LOD	9.14	< LOD		284.41	23.17	341.02	
889	19/06/2023 16:26	XS017	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown gravelly silt	16.6	< LOD	9.46	< LOD		45.41	29.21	54.45		< LOD	11.17	< LOD		94.27	18.04	113.03	
890	19/06/2023 16:28	XS018	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown gravelly silt	16.6	< LOD	12.69	< LOD		< LOD	76.98	< LOD		< LOD	14.65	< LOD		< LOD	36.50	< LOD	
891	19/06/2023 16:30	XS019	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown gravelly silt	16.6	< LOD	11.66	< LOD		< LOD	63.64	< LOD		< LOD	13.88	< LOD		< LOD	31.22	< LOD	
892	19/06/2023 16:32	XS020	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown gravelly silt	16.6	4.06	2.69	4.87		25.65	9.74	30.76		< LOD	4.74	< LOD		102.42	7.99	122.81	
893	19/06/2023 16:34	XS021	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown gravelly silt	16.6	10.26	6.23	12.30		48.48	27.11	58.13		< LOD	10.62	< LOD		71.89	16.15	86.20	
894	19/06/2023 16:36	XS022	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown silt	5.2	< LOD	6.31	< LOD	6.70	49.51	14.37	52.23	29.00	19.32	5.13	20.38	19.00	180.31	12.69	190.20	110.00
899	20/06/2023 7:24	XS023	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown fine top soil silt	16.6	< LOD	10.47	< LOD		< LOD	45.06	< LOD		24.26	8.82	29.09		91.58	18.53	109.81	
900	20/06/2023 7:28	XS024	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown fine top soil silt	16.6	< LOD	11.9	< LOD		< LOD	51.22	< LOD		35.43	10.36	42.48		135.56	22.98	162.54	
901	20/06/2023 7:30	XS025	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown fine top soil silt	16.6	< LOD	18.11	< LOD		< LOD	101.68	< LOD		< LOD	21.48	< LOD		95.74	37.78	114.80	
902	20/06/2023 7:33	XS026	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown fine top soil silt	16.6	< LOD	21.38	< LOD		< LOD	125.88	< LOD		31.81	18.02	38.14		< LOD	61.32	< LOD	
903	20/06/2023 7:36	XS027	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown fine top soil silt	16.6	< LOD	15.95	< LOD		117.57	75.85	140.97		< LOD	17.85	< LOD		< LOD	53.63	< LOD	
904	20/06/2023 7:39	XS028	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown fine top soil silt	16.6	< LOD	6.23	< LOD		< LOD	18.10	< LOD		23.95	5.00	28.72		138.06	10.69	165.54	
905	20/06/2023 7:43	XS029	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown fine top soil silt	16.6	< LOD	7.35	< LOD		< LOD	35.02	< LOD		< LOD	9.07	< LOD		39.68	13.27	47.58	
906	20/06/2023 7:45	XS030	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown fine top soil silt	21	< LOD	7.04	< LOD	3.50	38.94	18.41	49.29	18.00	12.09	5.61	15.30	31.00	108.70	13.08	137.59	94.00
909	20/06/2023 8:00	XS031	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown fine top soil silt	16.6	4.07	2.65	4.88		< LOD	16.64	< LOD		< LOD	4.46	< LOD		142.17	10.25	170.47	
910	20/06/2023 8:02	XS032	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	9.67	< LOD		< LOD	45.57	< LOD		< LOD	11.11	< LOD		< LOD	23.14	< LOD	
911	20/06/2023 8:04	XS033	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand medium sized stones	16.6	< LOD	12.49	< LOD		< LOD	68.84	< LOD		< LOD	14.41	< LOD		< LOD	31.61	< LOD	
912	20/06/2023 8:07	XS034	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silt grey brown colour	16.6	< LOD	8.25	< LOD		< LOD	38.47	< LOD		< LOD	9.88	< LOD		28.17	13.69	33.78	
913	20/06/2023 8:09	XS035	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand brown	16.6	< LOD	7.69	< LOD		< LOD	34.72	< LOD		< LOD	8.81	< LOD		19.19	11.90	23.01	
914	20/06/2023 8:12	XS036	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand brown	16.6	< LOD	10.55	< LOD		< LOD	66.34	< LOD		< LOD	13.36	< LOD		< LOD	29.29	< LOD	
915	20/06/2023 8:14	XS037	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand brown	16.6	< LOD	7.67	< LOD		49.33	27.04	59.15		< LOD	8.63	< LOD		< LOD	19.12	< LOD	
916	20/06/2023 8:16	XS038	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silt brown	16.6	< LOD	7.74	< LOD		38.94	24.82	46.69		< LOD	8.77	< LOD		30.74	12.88	36.86	
917	20/06/2023 8:18	XS039	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand brown	13	9.92	5.98	11.40	4.40	44.48	22.92	51.13	22.00	21.15	6.96	24.31	26.00	61.58	13.59	70.78	39.00
918	20/06/2023 8:22	XS040	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand brown	16.6	< LOD	9.16	< LOD		< LOD	46.81	< LOD		< LOD	10.91	< LOD		31.25	16.70	37.47	
921	20/06/2023 8:38	XS041	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand brown	16.6	< LOD	10.39	< LOD		88.03	46.84	105.55		< LOD	12.19	< LOD		< LOD	31.64	< LOD	
922	20/06/2023 8:41	XS042	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand brown medium sized gravel	16.6	< LOD	10.17	< LOD		< LOD	53.42	< LOD		< LOD	11.69	< LOD		< LOD	25.47	< LOD	
923	20/06/2023 8:43	XS043	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand brown medium sized gravel	16.6	< LOD	13.78	< LOD		< LOD	83.38	< LOD		< LOD	14.99	< LOD		< LOD	38.82	< LOD	
924	20/06/2023 8:45	XS044	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand brown medium to large sized gravel	16.6	< LOD	13.74	< LOD		< LOD	80.54	< LOD		< LOD	16.03	< LOD		< LOD	39.55	< LOD	
925	20/06/2023 8:48	XS045	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Silty sand brown	16.6	< LOD	7.31	< LOD		< LOD	31.69	< LOD		< LOD	8.60	< LOD		77.50	13.74	92.93	
926	20/06/2023 8:50	XS046	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silt brown	16.6	< LOD	6.07	< LOD		< LOD	27.31	< LOD		< LOD	7.19	< LOD		43.23	10.76	51.83	
927	20/06/2023 8:53	XS047	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silt brown	16.6	< LOD	4.34	< LOD		< LOD	18.49	< LOD		< LOD	5.12	< LOD		40.66	7.82	48.75	
928	20/06/2023 8:56	XS048	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF		16.6	4.72	3.05	5.66		16.34	9.82	19.59		8.29	3.64	9.94		171.49	10.04	205.62	
929	20/06/2023 8:59	XS049	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silt brown	16.6	< LOD	10.78	< LOD		< LOD	58.09	< LOD		< LOD	12.59	< LOD		< LOD	27.39	< LOD	
930	20/06/2023 9:01	XS050	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silt brown	24	6.09	3.61	8.01	9.60	< LOD	16.48	< LOD	13.00	14.00	4.25	18.42	43.00	91.59	8.74	120.51	95.00
933	20/06/2023 9:10	XS051	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	6.25	< LOD		< LOD	29.60	< LOD		< LOD	7.33	< LOD		24.79	10.53	29.72	
934	20/06/2023 9:12	XS052	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	6.74	< LOD		< LOD	31.51	< LOD		< LOD	8.00	< LOD		69.95	13.20	83.87	
935	20/06/2023 9:19	XS053	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silty sand	16.6	< LOD	9.96	< LOD		< LOD	43.16	< LOD		13.42	7.98	16.09		43.52	16.20	52.18	
936	20/06/2023 9:21	XS054	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silt	16.6	< LOD	7.73	< LOD		< LOD	38.94	< LOD		< LOD	9.65	< LOD		52.51	15.58	62.96	
937	20/06/2023 9:25	XS055	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silt	16.6	< LOD	6.74	< LOD		< LOD	21.61	< LOD		19.03	5.40	22.82		53.08	9.16	63.65	
938	20/06/2023 9:28	XS056	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silty sand	16.6	< LOD	8.63	< LOD		< LOD	41.73	< LOD		< LOD	10.33	< LOD		31.60	14.96	37.89	
939	20/06/2023 9:32	XS057	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silt dark brown	16.6	< LOD	4.15	< LOD		< LOD	17.00	< LOD		< LOD	5.04	< LOD		33.25	6.83	39.87	
940	20/06/2023 9:35	XS058	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silt dark brown	16.6	< LOD	5.28	< LOD		< LOD	17.44	< LOD		13.07	4.37	15.67		43.81	7.39	52.53	
941	20/06/2023 9:38	XS059	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silt dark brown	16.6	< LOD	8.46	< LOD		< LOD	39.54	< LOD		< LOD	9.73	< LOD		< LOD	18.22	< LOD	
942	20/06/2023 9:40	XS060	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silt dark brown	13	< LOD	11.12	< LOD	14.00	< LOD	27.45	< LOD	17.00	78.92	9.41	90.71	130.00	41.58	10.67	47.79	56.00
945	20/06/2023 9:52	XS061	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silty sand dark brown	16.6	< LOD	8.39	< LOD		< LOD	31.07	< LOD		20.37	6.74	24.42		84.65	13.81	101.50	
946	20/06/2023 9:55	XS062	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silty sand	16.6	< LOD	7.36	< LOD		< LOD	24.24	< LOD		26.43	6.19	31.69		41.95	9.54	50.30	
947	20/06/2023 9:58	XS063	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silty sand	16.6	< LOD	10.59	< LOD		< LOD	45.39	< LOD		12.66	8.12	15.18		27.69	15.71	33.20	
948	20/06/2023 10:00	XS064	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silty sand	16.6	< LOD	4.97	< LOD		< LOD	17.64	< LOD		< LOD	5.95	< LOD		42.00	7.32	50.36	
949	20/06/2023 10:03	XS065	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silty sand	16.6	< LOD	10.45	< LOD		44.21	27.35	53.01		33.21	8.79	39.82		37.70	14.46	45.20	
950	20/06/2023 10:05	XS066	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silty sand light brown small gravel pieces	16.6	< LOD	9.44	< LOD		< LOD	56.21	< LOD		< LOD	11.04	< LOD		< LOD	24.08	< LOD	
951	20/06/2023 10:08	XS067	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silty sand light brown small gravel pieces	16.6	< LOD	15.2	< LOD		< LOD	87.69	< LOD		< LOD	18.03	< LOD		75.80	32.24	90.89	
952	20/06/2023 10:10	XS068	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silt medium gravel	16.6	15.38	7.6	18.44		< LOD	65.01	< LOD		< LOD	11.62	< LOD		< LOD	27.91	< LOD	
953	20/06/2023 10:13	XS069	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silty sand	16.6	< LOD	5.21	< LOD		< LOD	22.15	< LOD		< LOD	6.51	< LOD		42.25	9.11	50.66	
954	20/06/2023 10:16	XS070	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silty sand	34	< LOD	9.64	< LOD	7.30	< LOD	34.83	< LOD	23.00	30.81	7.95	46.68	91.00	30.95	12.40	46.89	160.00
957	20/06/2023 10:23	XS071	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silt	16.6	< LOD	26.6	< LOD		< LOD	170.99	< LOD		< LOD	29.97	< LOD		< LOD	63.24	< LOD	
958	20/06/2023 10:25	XS072	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silt	16.6	< LOD	7.46	< LOD		< LOD	23.93	< LOD		24.33	6.23	29.17		27.38	9.00	32.83	
959	20/06/2023 11:20	XS073	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF	Gravelly silty sand	16.6	< LOD	8.83	< LOD		45.99	14.19	55.14		61.55	7.47	73.80		284.09	16.03	340.64	
960	20/06/2023 11:24	XS074	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF	Gravelly silt	16.6	< LOD	6.64	< LOD		21.46	13.42	25.73		31.74	5.66	38.06		88.33	9.75	105.91	
961	20/06/2023 11:26	XS075	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF	Gravelly silt	16.6	< LOD	9.68	< LOD		38.92	22.67	46.67		34.18	7.96	40.98		138.00	16.55	165.47	
962	20/06/2023 11:28	XS076	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF	Gravelly silt	16.6	11.3	5.3	13.55		< LOD	24.19	< LOD		27.81	6.16	33.35		110.11	12.06	132.03	
963	20/06/2023 11:31	XS077	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF	Gravelly silty sand	16.6	< LOD	11.16	< LOD		43.38	23.98	52.01		48.83	9.10	58.55		218.25	19.94	261.69	
964	20/06/2023 11:34	XS078	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF	Gravelly silty sand	16.6	11.84	5.72	14.20		24.93	12.38	29.89		71.85	6.98	86.15		253.69	13.59	304.18	
965	20/06/2023 11:37	XS079	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF	Gravelly silt	16.6	< LOD	6.24	< LOD		35.00	21.17	41.97		< LOD	7.20	< LOD		42.05	11.89	50.42	
966	20/06/2023 11:43	DRAIN SED01	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF	Sediment from drain DS	16.6	< LOD	18.4	< LOD		< LOD	106.67	< LOD		27.86	15.41	33.41		< LOD	46.42	< LOD	
967	20/06/2023 11:46	XS080	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF	Silty gravelly sand	29	< LOD	9.19	< LOD	7.20	47.16	12.55	66.42	57.00	104.03	7.81	146.52	180.00	364.96	15.50	514.03	540.00
970	20/06/2023 11:55	XS081	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF	Silty gravelly sand	16.6	< LOD	9.02	< LOD		< LOD	165.93	< LOD		< LOD	59.82	< LOD		< LOD	283.72	< LOD	
971	20/06/2023 12:00	XS081	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF	Silty gravelly sand	16.6	< LOD	10.42	< LOD		< LOD	64.02	< LOD		< LOD	12.30	< LOD		< LOD	29.87	< LOD	
972	20/06/2023 12:03	XS082	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF		16.6	< LOD	11.68	< LOD		< LOD	32.93	< LOD		72.41	10.00	86.82		132.39	16.19	158.74	
973	20/06/2023 12:06	XS083	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF	Silty gravelly sand	16.6	< LOD	7.17	< LOD		< LOD	19.91	< LOD		36.44	5.97	43.69		119.21	10.83	142.94	
974	20/06/2023 12:09	XS084	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF	Silty gravelly sand	16.6	< LOD	9.95	< LOD		< LOD	38.03	< LOD		27.85	8.11	33.39		185.57	19.85	222.51	
975	20/06/2023 12:12	XS085	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF	Silty sand	16.6	< LOD	7.69	< LOD		< LOD	28.32	< LOD		14.37	6.00	17.23		44.27	11.10	53.08	
976	20/06/2023 12:16	XS086	Goulburn Wheat Yards Assessment	King Street	In-situ - XRF	Silty sand	16.6	< LOD	8.39	< LOD		< LOD	23.97	< LOD		38.40	6.78	46.04		152.03	13.67	182.29	
977	20/06/2023 12:18	XS087	Goulburn Wheat Yards Assessment	King Street	In-situ - XRF	Gravelly silt	16.6	< LOD	5.32	< LOD		< LOD	14.48	< LOD		24.65	4.48	29.56		81.30	7.75	97.48	
978	20/06/2023 12:20	XS088	Goulburn Wheat Yards Assessment	King Street	In-situ - XRF	Gravelly silt	16.6	< LOD	13.31	< LOD		< LOD	39.83	< LOD		72.29	11.20	86.68		293.85	24.38	352.34	
979	20/06/2023 12:25	XS088	Goulburn Wheat Yards Assessment	King Street	In-situ - XRF	Gravelly silt	16.6	< LOD	27.87	< LOD		< LOD	152.98	< LOD		< LOD	28.02	< LOD		282.97	71.71	339.29	
980	20/06/2023 12:26	XS089	Goulburn Wheat Yards Assessment	King Street	In-situ - XRF	Gravelly silt	16.6	< LOD	9.1	< LOD		49.49	25.10	59.34		16.34	7.12	19.59		448.19	27.12	537.40	
981	20/06/2023 12:28	XS090	Goulburn Wheat Yards Assessment	King Street	In-situ - XRF	Gravelly silt	31	< LOD	8.21	< LOD	3.20	25.92	14.97	37.57	28.00	51.64	6.94	74.84	130.00	286.95	16.20	415.87	470.00
984	20/06/2023 12:45	XS091	Goulburn Wheat Yards Assessment	King Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	10.69	< LOD		< LOD	31.25	< LOD		59.75	9.06	71.64		138.89	15.84	166.53	
985	20/06/2023 12:48	XS092	Goulburn Wheat Yards Assessment	King Street	In-situ - XRF	Silty sand	16.6	< LOD	8.13	< LOD		22.08	12.69	26.47		65.16	6.83	78.13		799.82	23.16	959.02	
986	20/06/2023 12:50	XS093	Goulburn Wheat Yards Assessment	King Street	In-situ - XRF	Silty sand	16.6	< LOD	9.82	< LOD		< LOD	24.92	< LOD		65.71	8.20	78.79		146.89	13.64	176.13	
987	20/06/2023 13:18	XS094	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	28.71	< LOD		< LOD	99.72	< LOD		45.92	25.07	55.06		126.16	50.50	151.27	
988	20/06/2023 13:21	XS095	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	21.9	< LOD		< LOD	124.07	< LOD		30.04	18.16	36.02		< LOD	57.77	< LOD	
989	20/06/2023 13:23	XS096	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	9.44	< LOD		< LOD	26.06	< LOD		57.69	8.02	69.17		106.37	12.76	127.54	
990	20/06/2023 13:25	XS097	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	8.27	< LOD		37.94	14.82	45.49		49.59	6.78	59.46		91.98	10.50	110.29	
991	20/06/2023 13:28	XS098	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	6.53	< LOD		27.27	17.06	32.70		10.16	5.23	12.18		73.83	11.18	88.53	
992	20/06/2023 13:30	XS099	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	8.32	< LOD		38.22	20.78	45.83		24.08	6.88	28.87		66.93	12.62	80.25	
993	20/06/2023 13:33	XS100	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	13	< LOD	9.99	< LOD	4.50	27.10	13.39	31.15	25.00	99.81	8.34	114.72	150.00	172.31	12.30	198.06	180.00
996	20/06/2023 13:47	XS101	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	3.26	< LOD		< LOD	14.44	< LOD		< LOD	3.89	< LOD		154.08	9.54	184.75	
997	20/06/2023 13:49	XS102	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	2.46	< LOD		< LOD	10.16	< LOD		< LOD	3.01	< LOD		107.48	6.73	128.87	
998	20/06/2023 13:51	XS103	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	11.37	< LOD		< LOD	56.01	< LOD		14.68	9.32	17.60		< LOD	29.28	< LOD	
999	20/06/2023 13:53	XS104	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	9.99	< LOD		< LOD	48.74	< LOD		< LOD	12.31	< LOD		42.55	17.46	51.02	
1000	20/06/2023 13:55	XS105	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	11.19	< LOD		< LOD	59.64	< LOD		< LOD	12.87	< LOD		< LOD	28.93	< LOD	
1001	20/06/2023 13:58	XS106	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	9.68	< LOD		< LOD	36.46	< LOD		30.37	8.33	36.41		89.73	16.19	107.59	
1002	20/06/2023 14:00	XS107	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	7.79	< LOD		< LOD	30.06	< LOD		16.83	6.39	20.18		106.48	14.16	127.67	
1003	20/06/2023 14:02	XS108	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	8.34	< LOD		< LOD	26.49	< LOD		27.72	6.78	33.24		99.49	12.98	119.29	
1004	20/06/2023 14:43	XS109	Goulburn Wheat Yards Assessment	Lansdowne Street	In-situ - XRF	Gravelly silt	16.6	< LOD	9.08	< LOD		< LOD	36.28	< LOD		< LOD	11.16	< LOD		24.60	13.99	29.50	
1005	20/06/2023 14:46	XS110	Goulburn Wheat Yards Assessment	Lansdowne Street	In-situ - XRF	Gravelly silt	15	< LOD	5.42	< LOD	2.70	43.85	15.43	51.59	56.00	< LOD	6.40	< LOD	22.00	200.65	14.03	236.06	140.00
1008	20/06/2023 14:55	XS111	Goulburn Wheat Yards Assessment	Lansdowne Street	In-situ - XRF	Gravelly silt	16.6	6.29	3.48	7.54		15.31	9.43	18.36		19.94	4.16	23.91		295.48	12.49	354.29	
1009	20/06/2023 14:57	XS112	Goulburn Wheat Yards Assessment	Lansdowne Street	In-situ - XRF	Gravelly silt	16.6	< LOD	7.15	< LOD		< LOD	18.36	< LOD		43.48	6.01	52.13		85.84	9.18	102.93	
1010	20/06/2023 15:00	XS113	Goulburn Wheat Yards Assessment	Lansdowne Street	In-situ - XRF	Gravelly silt	16.6	< LOD	6.78	< LOD		< LOD	23.16	< LOD		21.27	5.75	25.50		49.43	9.50	59.27	
1011	20/06/2023 15:02	XS114	Goulburn Wheat Yards Assessment	Lansdowne Street	In-situ - XRF	Gravelly silt	16.6	< LOD	11.17	< LOD		< LOD	37.13	< LOD		39.92	9.06	47.87		87.25	16.10	104.62	
1012	20/06/2023 15:04	XS115	Goulburn Wheat Yards Assessment	Lansdowne Street	In-situ - XRF	Gravelly silt	16.6	< LOD	5.86	< LOD		< LOD	19.76	< LOD		12.81	4.75	15.36		51.70	8.56	61.99	
1013	20/06/2023 15:07	XS116	Goulburn Wheat Yards Assessment	Lansdowne Street	In-situ - XRF	Gravelly silt	16.6	< LOD	10.05	< LOD		< LOD	49.84	< LOD		< LOD	12.14	< LOD		59.99	19.10	71.93	
1014	20/06/2023 15:10	XS117	Goulburn Wheat Yards Assessment	Lansdowne Street	In-situ - XRF	Gravelly silt	16.6	< LOD	10.02	< LOD		< LOD	47.40	< LOD		15.54	8.51	18.63		32.34	16.88	38.78	
1015	20/06/2023 15:12	XS118	Goulburn Wheat Yards Assessment	Lansdowne Street	In-situ - XRF	Gravelly silt	16.6	< LOD	10.87	< LOD		< LOD	73.20	< LOD		< LOD	12.64	< LOD		< LOD	31.39	< LOD	
1016	20/06/2023 15:20	XS119	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	8.53	< LOD		< LOD	33.63	< LOD		11.08	6.60	13.29		160.95	17.69	192.99	
1017	20/06/2023 15:23	XS120	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	17	< LOD	6.28	< LOD	5.20	< LOD	18.08	< LOD	16.00	27.13	5.20	32.69	55.00	107.27	9.87	129.24	120.00
1020	20/06/2023 15:33	XS121	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	3.89	2.56	4.66		16.68	9.18	20.00		< LOD	4.49	< LOD		157.97	9.20	189.41	
1021	20/06/2023 15:36	XS122	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	5.29	< LOD		< LOD	17.92	< LOD		12.13	4.42	14.54		199.14	12.43	238.78	
1022	20/06/2023 15:38	XS123	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	4.45	< LOD		24.45	9.47	29.32		10.71	3.62	12.84		106.61	7.97	127.83	
1023	20/06/2023 15:40	XS124	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	5.38	< LOD		< LOD	19.85	< LOD		< LOD	6.40	< LOD		43.62	8.16	52.30	
1024	20/06/2023 15:42	XS125	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	5.18	< LOD		< LOD	19.17	< LOD		< LOD	6.06	< LOD		68.18	8.88	81.75	
1025	20/06/2023 15:44	XS126	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	7.28	< LOD		< LOD	33.83	< LOD		< LOD	8.92	< LOD		33.34	12.31	39.98	
1026	20/06/2023 15:46	XS127	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silty sand	16.6	< LOD	9.01	< LOD		< LOD	45.03	< LOD		< LOD	10.80	< LOD		41.59	16.61	49.87	

TABLE 1:
Recreational C - Soil Sampling Results

Reading No:	Sample date:	Sample ID:	Project Name:	Road:	Sampling Method:	Sample Description	Average Moisture Content	Arsenic (ppm)	Arsenic Error	Arsenic Corrected (ppm)	Arsenic Lab (mg/kg)	Copper (ppm)	Copper Error (ppm)	Copper Corrected (ppm)	Copper Lab (mg/kg)	Lead (ppm)	Lead Error (ppm)	Lead Corrected (ppm)	Lead Lab (mg/kg)	Zinc (ppm)	Zinc Error	Zinc Corrected (ppm)	Zinc Lab (mg/kg)
NEPM 2013 HIL C Recreational										300				17000				600				30000	
NEPM 2013 EIL Residential /Public Open Space										100				95				1100				70	
1027	20/06/2023 15:48	XS128	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silty sand	16.6	5.35	3.11	6.41		< LOD	13.09	< LOD		13.09	3.73	15.70		132.50	8.53	158.87	
1028	20/06/2023 15:50	XS129	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silty sand	16.6	< LOD	9.4	< LOD		< LOD	41.52	< LOD		< LOD	10.93	< LOD		32.21	15.01	38.62	
1029	20/06/2023 15:53	XS130	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silty sand	14	< LOD	5.89	< LOD	3.10	22.52	12.33	26.19	13.00	19.91	4.85	23.15	41.00	233.29	13.18	271.27	170.00
1032	20/06/2023 16:04	XS131	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silty sand	16.6	< LOD	11.06	< LOD		< LOD	48.51	< LOD		15.83	8.73	18.98		25.13	16.73	30.13	
1033	20/06/2023 16:06	XS132	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	21.36	< LOD		< LOD	132.65	< LOD		< LOD	23.65	< LOD		< LOD	55.83	< LOD	
1034	20/06/2023 16:08	XS133	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	12.79	< LOD		< LOD	57.56	< LOD		26.03	10.47	31.21		50.44	20.88	60.48	
1035	20/06/2023 16:11	XS134	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand medium gravel	16.6	< LOD	11.69	< LOD		< LOD	55.92	< LOD		< LOD	13.66	< LOD		< LOD	26.74	< LOD	
1036	20/06/2023 16:13	XS135	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	10.51	< LOD		< LOD	47.34	< LOD		13.35	8.51	16.01		73.28	18.84	87.87	
1037	20/06/2023 16:15	XS136	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand medium sized gravel	16.6	< LOD	6.57	< LOD		< LOD	32.60	< LOD		< LOD	7.75	< LOD		30.46	12.00	36.52	
1038	20/06/2023 16:17	XS137	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand medium sized gravel	16.6	< LOD	13.07	< LOD		< LOD	58.06	< LOD		27.78	10.59	33.31		52.98	20.83	63.53	
1039	20/06/2023 16:19	XS138	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand medium sized gravel	16.6	< LOD	9.13	< LOD		< LOD	52.46	< LOD		< LOD	10.56	< LOD		< LOD	24.79	< LOD	
1040	20/06/2023 16:22	XS139	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand medium sized light brown	16.6	< LOD	8.12	< LOD		< LOD	38.59	< LOD		< LOD	9.72	< LOD		< LOD	17.82	< LOD	
1041	20/06/2023 16:25	XS140	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand medium sized light brown	13	< LOD	8.75	< LOD	3.80	37.34	24.57	42.92	21.00	17.95	7.28	20.63	20.00	132.02	17.37	151.75	99.00
1044	20/06/2023 16:38	XS141	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	12.04	< LOD		< LOD	76.71	< LOD		< LOD	14.34	< LOD		< LOD	35.24	< LOD	
1045	20/06/2023 16:40	XS142	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	11.65	< LOD		< LOD	67.63	< LOD		< LOD	12.87	< LOD		< LOD	32.18	< LOD	
1046	20/06/2023 16:42	XS143	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	12.02	< LOD		337.80	45.08	405.04		21.87	9.62	26.22		< LOD	26.32	< LOD	
1047	20/06/2023 16:44	XS144	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	6.13	< LOD		< LOD	21.82	< LOD		12.81	5.00	15.36		106.75	11.24	128.00	
1050	21/06/2023 7:26	XS145	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt	16.6	< LOD	4.96	< LOD		< LOD	19.94	< LOD		< LOD	6.07	< LOD		59.50	8.64	71.34	
1051	21/06/2023 7:28	XS146	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt	16.6	< LOD	515.94	< LOD		< LOD	14728.89	< LOD		< LOD	1439.79	< LOD		< LOD	19964.13	< LOD	
1052	21/06/2023 7:29	XS146	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt	16.6	< LOD	8.11	< LOD		< LOD	53.73	< LOD		< LOD	8.97	< LOD		< LOD	25.49	< LOD	
1053	21/06/2023 7:32	XS147	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	10.06	< LOD		87.32	46.02	104.70		< LOD	11.65	< LOD		< LOD	32.26	< LOD	
1054	21/06/2023 7:36	XS148	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	12.48	< LOD		< LOD	86.63	< LOD		< LOD	14.73	< LOD		< LOD	40.00	< LOD	
1055	21/06/2023 7:38	XS149	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	6.53	< LOD		34.13	18.07	40.92		10.20	5.39	12.23		187.30	15.49	224.58	
1056	21/06/2023 7:41	XS150	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	8.6	< LOD	11.01	< LOD	8.90	< LOD	65.03	< LOD	67.00	< LOD	12.83	< LOD	68.00	159.47	28.04	174.47	130.00
1059	21/06/2023 7:53	XS151	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	17.43	< LOD		< LOD	102.26	< LOD		< LOD	20.67	< LOD		< LOD	46.54	< LOD	
1060	21/06/2023 7:56	XS152	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	9.48	< LOD		< LOD	42.52	< LOD		< LOD	11.09	< LOD		60.86	16.34	72.97	
1061	21/06/2023 7:59	XS153	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	22.82	< LOD		< LOD	150.90	< LOD		< LOD	26.01	< LOD		< LOD	67.18	< LOD	
1062	21/06/2023 8:02	XS154	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	30.57	< LOD		< LOD	202.96	< LOD		< LOD	33.56	< LOD		< LOD	100.79	< LOD	
1063	21/06/2023 8:05	XS155	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	31.44	20.94	37.70		< LOD	134.13	< LOD		86.12	24.15	103.26		148.31	50.92	177.83	
1064	21/06/2023 8:13	XS156	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	10.55	< LOD		< LOD	58.35	< LOD		< LOD	12.58	< LOD		< LOD	28.79	< LOD	
1065	21/06/2023 8:16	XS157	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	9.45	< LOD		< LOD	58.27	< LOD		< LOD	10.26	< LOD		< LOD	26.63	< LOD	
1066	21/06/2023 8:18	XS158	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	13.62	7.54	16.33		< LOD	61.35	< LOD		< LOD	11.80	< LOD		41.24	21.15	49.45	
1067	21/06/2023 8:21	XS159	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand medium sized gravel	16.6	< LOD	14.26	< LOD		< LOD	84.93	< LOD		< LOD	16.05	< LOD		< LOD	36.87	< LOD	
1068	21/06/2023 8:24	XS160	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	18	< LOD	9.66	< LOD	4.60	< LOD	47.23	< LOD	18.00	< LOD	11.07	< LOD	18.00	< LOD	23.37	< LOD	47.00
1071	21/06/2023 8:50	XS161	Goulburn Wheat Yards Assessment	Unnamed Road	In-situ - XRF	Gravelly silty sand	16.6	< LOD	7.81	< LOD		< LOD	27.67	< LOD		26.74	6.77	32.06		163.99	15.59	196.63	
1072	21/06/2023 8:52	XS162	Goulburn Wheat Yards Assessment	Unnamed Road	In-situ - XRF	Gravelly silt	16.6	< LOD	10.84	< LOD		< LOD	57.09	< LOD		< LOD	12.48	< LOD		183.22	26.47	219.69	
1073	21/06/2023 8:55	XS163	Goulburn Wheat Yards Assessment	Unnamed Road	In-situ - XRF	Gravelly silt	16.6	< LOD	7.81	< LOD		40.47	16.01	48.53		35.83	6.41	42.96		121.10	12.07	145.20	
1074	21/06/2023 8:58	XS164	Goulburn Wheat Yards Assessment	Unnamed Road	In-situ - XRF	Gravelly silt	16.6	< LOD	10.92	< LOD		75.54	50.06	74.71		< LOD	11.90	< LOD		< LOD	30.81	< LOD	
1075	21/06/2023 9:01	XS165	Goulburn Wheat Yards Assessment	Unnamed Road	In-situ - XRF	Gravelly silt	16.6	< LOD	29.94	< LOD		< LOD	118.92	< LOD		123.95	25.60	148.62		< LOD	53.80	< LOD	
1076	21/06/2023 9:04	XS166	Goulburn Wheat Yards Assessment	Unnamed Road	In-situ - XRF	Gravelly silty sand	16.6	14.38	6.77	17.24		< LOD	27.27	< LOD		52.72	8.04	63.21		78.03	12.15	93.56	
1077	21/06/2023 9:07	XS167	Goulburn Wheat Yards Assessment	Unnamed Road	In-situ - XRF	Gravelly silty sand	16.6	< LOD	18.16	< LOD		< LOD	112.95	< LOD		< LOD	21.16	< LOD		< LOD	49.09	< LOD	
1078	21/06/2023 9:10	XS168.	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	6.93	< LOD		< LOD	26.04	< LOD		13.69	5.60	16.41		68.13	11.16	81.69	
1079	21/06/2023 9:12	XS169	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	11.73	6.14	14.06		< LOD	36.12	< LOD		13.15	6.95	15.77		52.49	13.83	62.94	
1080	21/06/2023 9:16	XS170	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16	< LOD	9.07	< LOD	3.10	< LOD	56.07	< LOD	15.00	< LOD	10.22	< LOD	28.00	< LOD	27.42	< LOD	98.00
1083	21/06/2023 9:24	XS171	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	15.43	< LOD		< LOD	42.43	< LOD		90.66	12.47	108.71		154.97	20.40	185.82	
1084	21/06/2023 9:27	XS172	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	30.54	< LOD		< LOD	210.85	< LOD		< LOD	30.89	< LOD		< LOD	85.70	< LOD	
1085	21/06/2023 9:30	XS173	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	14.85	< LOD		< LOD	88.81	< LOD		< LOD	17.43	< LOD		72.14	32.09	86.50	
1086	21/06/2023 9:32	XS174	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	23.32	15.24	27.96		< LOD	137.53	< LOD		< LOD	23.74	< LOD		< LOD	69.85	< LOD	
1087	21/06/2023 9:35	XS175	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	22.7	< LOD		< LOD	142.85	< LOD		< LOD	25.95	< LOD		< LOD	65.17	< LOD	
1088	21/06/2023 9:38	XS176	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	70646	< LOD		< LOD	2366.28	< LOD		< LOD	623.19	< LOD		< LOD	3030.73	< LOD	
1089	21/06/2023 9:39	XS176	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	16.47	< LOD		< LOD	73.01	< LOD		44.60	13.89	53.48		111.88	29.44	134.15	
1090	21/06/2023 9:42	XS177	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	7.19	< LOD		23.57	14.98	28.26		25.86	5.77	31.01		287.34	16.41	344.53	
1091	21/06/2023 9:45	XS178	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	20.22	< LOD		< LOD	155.49	< LOD		< LOD	23.75	< LOD		< LOD	66.11	< LOD	
1092	21/06/2023 9:48	XS179	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	14	< LOD	18.42	< LOD	4.90	< LOD	84.96	< LOD	28.00	37.34	14.89	43.42	81.00	149.71	35.89	174.08	190.00
1093	21/06/2023 9:51	XS180	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	21.8	14.46	26.14		< LOD	146.26	< LOD		< LOD	21.87	< LOD		< LOD	71.32	< LOD	
1096	21/06/2023 10:46	XS181	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand dark brown	16.6	< LOD	19.1	< LOD		< LOD	121.23	< LOD		< LOD	24.41	< LOD		173.79	58.06	208.38	
1097	21/06/2023 10:48	XS182	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand dark brown	16.6	< LOD	26.7	< LOD		< LOD	191.31	< LOD		< LOD	32.08	< LOD		< LOD	77.93	< LOD	
1098	21/06/2023 10:51	XS183	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand dark brown	16.6	< LOD	9.55	< LOD		< LOD	39.60	< LOD		18.50	7.69	22.18		111.76	17.73	134.00	
1099	21/06/2023 10:53	XS184	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand dark brown	16.6	< LOD	9.42	< LOD		< LOD	57.36	< LOD		< LOD	11.36	< LOD		< LOD	27.23	< LOD	
1100	21/06/2023 10:56	XS185	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand dark brown	16.6	< LOD	8.86	< LOD		31.32	19.97	37.55		32.68	7.35	39.18		96.76	13.65	116.02	
1101	21/06/2023 10:58	XS186	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand dark brown	16.6	9.09	5.41	10.90		30.33	14.68	36.37		43.91	6.52	52.65		116.32	11.31	139.47	
1102	21/06/2023 11:01	XS187	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand dark brown	16.6	< LOD	9.45	< LOD		< LOD	39.42	< LOD		23.34	8.03	27.99		34.32	13.98	41.15	
1103	21/06/2023 11:03	XS188	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand light brown	16.6	< LOD	14.95	< LOD		< LOD	89.72	< LOD		< LOD	15.81	< LOD		< LOD	40.97	< LOD	
1104	21/06/2023 11:05	XS189	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand light brown	16.6	< LOD	11.34	< LOD		< LOD	50.72	< LOD		15.42	8.93	18.49		< LOD	26.06	< LOD	
1105	21/06/2023 11:10	XS190	Goulburn Wheat Yards Assessment	Finlay Road	In-situ - XRF		12	< LOD	9.39	< LOD	11.00	< LOD	37.67	< LOD	24.00	22.94	7.80	26.07	61.00	138.45	18.15	157.33	97.00
1108	21/06/2023 11:16	XS191	Goulburn Wheat Yards Assessment	Finlay Road	In-situ - XRF	Gravelly silty sand	16.6	< LOD	5.07	< LOD		22.16	11.24	26.57		10.05	4.03	12.05		76.53	8.14	91.76	
1109	21/06/2023 11:19	XS192	Goulburn Wheat Yards Assessment	Finlay Road	In-situ - XRF	Gravelly silty sand	16.6	< LOD	10.94	< LOD		< LOD	56.23	< LOD		< LOD	12.99	< LOD		< LOD	26.25	< LOD	
1110	21/06/2023 11:21	XS193	Goulburn Wheat Yards Assessment	Finlay Road	In-situ - XRF	Gravelly silty sand	16.6	< LOD	7.63	< LOD		< LOD	31.47	< LOD		< LOD	8.98	< LOD		106.85	14.64	128.12	
1111	21/06/2023 11:23	XS194	Goulburn Wheat Yards Assessment	Finlay Road	In-situ - XRF	Gravelly silty sand	16.6	< LOD	6.57	< LOD		36.04	22.81	43.21		< LOD	7.27	< LOD		52.97	13.02	63.51	
1112	21/06/2023 11:25	XS195	Goulburn Wheat Yards Assessment	Finlay Road	In-situ - XRF	Gravelly silty sand	16.6	< LOD	31.61	< LOD		< LOD	159.92	< LOD		70.67	25.77	84.74		< LOD	74.42	< LOD	
1113	21/06/2023 11:27	XS196	Goulburn Wheat Yards Assessment	Finlay Road	In-situ - XRF	Gravelly silty sand	16.6	< LOD	21.74	< LOD		< LOD	66.98	< LOD		110.00	17.73	131.89		62.80	24.98	75.30	
1114	21/06/2023 11:29	XS197	Goulburn Wheat Yards Assessment	Finlay Road	In-situ - XRF	Gravelly silty sand	16.6	< LOD	20.56	< LOD		< LOD	76.08	< LOD		83.13	17.36	99.68		< LOD	39.32	< LOD	
1115	21/06/2023 11:31	XS198	Goulburn Wheat Yards Assessment	Finlay Road	In-situ - XRF	Gravelly silty sand	16.6	< LOD	29	< LOD		< LOD	117.48	< LOD		98.66	23.64	118.30		< LOD	58.84	< LOD	
1116	21/06/2023 11:33	XS199	Goulburn Wheat Yards Assessment	Finlay Road	In-situ - XRF	Fine gravelly silt	16.6	< LOD	24.26	< LOD		< LOD	98.87	< LOD		70.87	19.34	84.98		< LOD	51.89	< LOD	
1117	21/06/2023 11:35	XS200	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silt, sample duplicate and triplicate taken D01 T01	19	< LOD	9.79	< LOD	12.00	< LOD	37.44	< LOD	27.00	26.00	7.93	32.10	54.00	76.78	15.22	94.79	99.00
1120	21/06/2023 11:41	XS201	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF		16.6	< LOD	17.98	< LOD		110.42	66.71	132.40		< LOD	20.03	< LOD		< LOD	50.04	< LOD	
1121	21/06/2023 11:52	XS202	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silty sand	16.6	< LOD	23.19	< LOD		< LOD	153.98	< LOD		< LOD	27.63	< LOD		< LOD	73.74	< LOD	
1122	21/06/2023 11:54	XS203	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silty sand	16.6	< LOD	13.1	< LOD		< LOD	57.84	< LOD		28.03	10.66	33.61		163.10	26.31	195.56	
1123	21/06/2023 11:56	XS204	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly sandy silt	16.6	< LOD	10.47	< LOD		< LOD	49.90	< LOD		< LOD	12.50	< LOD		107.09	20.90	128.41	
1124	21/06/2023 11:58	XS205	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly sandy silt	16.6	< LOD	17.51	< LOD		< LOD	89.20	< LOD		35.22	14.60	42.23		73.36	31.61	87.96	
1125	21/06/2023 12:00	XS206	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly sandy silt	16.6	< LOD	15.12	< LOD		< LOD	63.85	< LOD		32.79	11.68	39.32		119.78	26.23	143.62	
1126	21/06/2023 12:02	XS207	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF		16.6	6.96	3.54	8.35		35.18	9.52	42.18		26.73	4.27	32.05		234.85	10.76	281.59	
1127	21/06/2023 12:05	XS208	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly sandy silt	16.6	22.24	11.31	26.67		< LOD	98.95	< LOD		< LOD	16.94	< LOD		< LOD	46.10	< LOD	
1128	21/06/2023 12:07	XS209	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly sandy silt	16.6	< LOD	11.32	< LOD		< LOD	49.40	< LOD		13.87	8.61	16.63		41.57	18.00	49.84	
1129	21/06/2023 12:09	XS210	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly sandy silt	8.9	< LOD	7.13	< LOD	11.00	< LOD	27.87	< LOD	27.00	< LOD	8.37	< LOD	29.00	86.55	12.72	95.01	65.00
	21/06/2023 12:23	XS211	Goulburn Wheat Yards Assessment	Sloane Street	no sample collected	Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete																	
	21/06/2023 12:23	XS212	Goulburn Wheat Yards Assessment	Sloane Street	no sample collected	Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete																	
	21/06/2023 12:27	XS213	Goulburn Wheat Yards Assessment	Sloane Street	no sample collected	Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete																	
	21/06/2023 12:29	XS214	Goulburn Wheat Yards Assessment	Sloane Street	no sample collected	Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete																	
	21/06/2023 12:31	XS215	Goulburn Wheat Yards Assessment	Sloane Street	no sample collected	Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete																	
	21/06/2023 12:33	XS216	Goulburn Wheat Yards Assessment	Sloane Street	no sample collected	Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete																	
	21/06/2023 12:33	XS217	Goulburn Wheat Yards Assessment	Sloane Street	no sample collected	Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete																	
	21/06/2023 12:37	XS218	Goulburn Wheat Yards Assessment	Sloane Street	no sample collected	Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete																	
	21/06/2023 12:37	XS219	Goulburn Wheat Yards Assessment	Sloane Street	no sample collected	Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete																	
1132	21/06/2023 12:39	bitumen1	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF		16.6	< LOD	10.49	< LOD		< LOD	60.27	< LOD		< LOD	12.01	< LOD		49.39	21.97	48.56	
1133	21/06/2023 13:36	XS220	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt	16.6	< LOD	26.76	< LOD		< LOD	125.81	< LOD		< LOD	27.92	< LOD		< LOD	73.08	< LOD	
1134	21/06/2023 13:40	XS221	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt	16.6	43.87	22.11	52.60		< LOD	247.14	< LOD		< LOD	28.13	< LOD		< LOD	96.57	< LOD	
1135	21/06/2023 13:42	XS222	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt	16.6	< LOD	10.48	< LOD		< LOD	56.17	< LOD		< LOD	11.85	< LOD		< LOD	27.55	< LOD	
1136	21/06/2023 13:44	XS223	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt, sample taken duplicate and triplicate number D02 T02	14	< LOD	6.18	< LOD	6.90	25.06	15.75	29.14	17.00	9.38	4.96	10.91	22.00	70.13	10.29	69.27	47.00
1137	21/06/2023 13:46	XS224	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt	16.6	12.04	7.66	14.44		< LOD	59.11	< LOD		< LOD	12.54	< LOD		< LOD	27.91	< LOD	
1138	21/06/2023 13:48	XS225	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt	16.6	< LOD	8.87	< LOD		< LOD	45.29	< LOD		< LOD	9.94	< LOD		< LOD	22.31	< LOD	
1139	21/06/2023 13:50	XS226	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt	16.6	< LOD	14.04	< LOD		< LOD	80.42	< LOD		< LOD	16.99	< LOD		< LOD	36.01	< LOD	
1140	21/06/2023 13:54	XS227	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF		16.6	< LOD	8.81	< LOD		< LOD	44.83	< LOD		< LOD	10.64	< LOD		< LOD	23.21	< LOD	
1141	21/06/2023 13:59	XS228	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt	16.6	< LOD	6.73	< LOD		< LOD	29.02	< LOD		< LOD	7.93	< LOD		85.02	13.14	84.19	
1142	21/06/2023 14:03	XS229	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt medium gravel	16.6	10.01	5.44	12.00		55.85	23.02	66.97		< LOD	9.23	< LOD		67.67	13.52	66.84	
1143	21/06/2023 14:05	XS230	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy fill	16.6	< LOD	6.75	< LOD		41.11	20.43	49.29		< LOD	8.64	< LOD		22.37	10.20	21.54	
1146	21/06/2023 14:12	XS231	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silt black	16.6	< LOD	14.85	< LOD		< LOD	124.95	< LOD		< LOD	16.83	< LOD		< LOD	52.68	< LOD	
1147	21/06/2023 14:15	XS232	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly sandy silt black	16.6	< LOD	9.12	< LOD		56.61	32.45	67.88		< LOD	10.90	< LOD		47.35	17.21	46.52	
1148	21/06/2023 14:17	XS233	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt medium sized gravel	16.6	17.65	9.65	21.16		< LOD	86.69	< LOD		< LOD	14.77	< LOD		< LOD	36.97	< LOD	
Statistical Summary										**Arsenic**				**Copper**				**Lead**				**Zinc**	
Number of Results										230				230				230				230	
Number of Detects										28				50				103				150	
Number of non-Detects										202				180				127				80	
Minimum Concentration										< LOD				< LOD				< LOD				< LOD	
Minimum Detect										4.7				18.4				9.9				21.5	
Maximum Concentration										52.6				405.0				148.6				959.0	
Maximum Detect										52.6				405.0				148.6				959.0	
Mean Concentration										15.9				57.0				41.9				133.3	
Standard Deviation										10.5				55.8				31.2				117.9	
Number of Results above EIL										0				5				0				100	
Number of Results above HIL										0				0				0				0	
Number of Results >2.5 times above EIL										0				1				0				34	

Blank Cell indicates no criterion available
LOR = Limit of Reporting
National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).
Nickel, Zinc and Copper EIL, based on CEC of 5cmol/kg
Concentration in red font and grey box exceed the adopted HIL 'C' Recreational Use
Concentration in green font and grey box exceed the adopted EIL for Urban Residential/ Public Open Space
Concentrations in box exceed the screening value >2.5 times
Where one or more guideline value is exceeded, the highest guidleline value will be highlighted
Concentrations below the LOR noted as <value

Client: ARTC
Job No: 318001660
Project Name: Goulburn Wheat Yards Assessment Offsite Lead Delineation
7/09/2023

TABLE 2:
Recreational C - 'Worst Case' Soil Sampling Results

Reading No:	Sample date:	Sample ID:	Project Name:	Road:	Sampling Method:	Sample Description	Average Moisture Content (%)	Arsenic (ppm)	Arsenic Error	Worst Case Arsenic (ppm)	Arsenic Corrected (ppm)	Worst Case Arsenic Corrected (ppm)	Arsenic Lab (mg/kg)	Copper (ppm)	Copper Error (ppm)	Worst Case Copper (ppm)	Copper Corrected (ppm)	Worst Case Copper Corrected (ppm)	Copper Lab (mg/kg)	Lead (ppm)	Lead Error (ppm)	Worst Case Lead (ppm)	Lead Corrected (ppm)	Worst Case Lead Corrected (ppm)	Lead Lab (mg/kg)	Zinc (ppm)	Zinc Error	Worst Case Zinc (ppm)	Zinc Corrected (ppm)	Worst Case Zinc Corrected (ppm)	Zinc Lab (mg/kg)
NEPM 2013 HIL C Recreational											300						17000						600						30000		
NEPM 2013 EIL Residential / Public Open Space											100						95						1100						70		
871	19/06/2023 14:48	XS001	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown silty sand	16.6	< LOD	7.88	7.88	< LOD	9.45		< LOD	41.76	41.76	< LOD	50.07		< LOD	8.69	8.69	< LOD	10.42		< LOD	20.35	20.35	< LOD	24.40	
872	19/06/2023 14:51	XS002	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown silt	16.6	< LOD	15.8	15.8	< LOD	18.94		< LOD	93.01	93.01	< LOD	111.52		< LOD	17.27	17.27	< LOD	20.71		< LOD	42.07	42.07	< LOD	50.44	
873	19/06/2023 14:54	XS003	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown silt	16.6	9.41	4.88	14.29	11.28	17.13		< LOD	28.65	28.65	< LOD	34.35		< LOD	8.28	8.28	< LOD	9.93		51.40	11.40	62.8	61.63	75.30	
874	19/06/2023 14:57	XS004	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown silt, gravel	16.6	< LOD	7.06	7.06	< LOD	8.47		< LOD	30.51	30.51	< LOD	36.58		< LOD	8.41	8.41	< LOD	10.08		40.70	11.43	52.13	48.80	62.51	
875	19/06/2023 15:00	XS005	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Light brown silt	16.6	< LOD	8.92	8.92	< LOD	10.70		< LOD	34.79	34.79	< LOD	41.71		11.88	6.90	18.78	14.24	22.52		18.46	12.17	30.63	22.13	36.73	
876	19/06/2023 15:04	XS006	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Light brown silt with gravel	16.6	< LOD	17.17	17.17	< LOD	20.59		< LOD	106.19	106.19	< LOD	127.33		< LOD	19.77	19.77	< LOD	23.71		< LOD	43.41	43.41	< LOD	52.05	
877	19/06/2023 15:07	XS007	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown silt	16.6	15.77	7.76	23.53	18.91	28.21		< LOD	70.22	70.22	< LOD	84.20		< LOD	11.47	11.47	< LOD	13.75		< LOD	32.30	32.30	< LOD	38.73	
878	19/06/2023 15:10	XS008	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown gravelly silt,	13	< LOD	6.3	6.3	< LOD	7.24	15.00	< LOD	21.71	21.71	< LOD	24.95	25.00	13.44	5.08	18.52	15.45	21.29	25.00	76.11	10.04	86.15	87.48	99.02	33.00
879	19/06/2023 15:13	XS009	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown gravelly silt,	16.6	< LOD	17.43	17.43	< LOD	20.90		< LOD	113.36	113.36	< LOD	135.92		< LOD	19.77	19.77	< LOD	23.71		< LOD	51.96	51.96	< LOD	62.30	
880	19/06/2023 15:17	XS010	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown gravelly silt,	16.6	< LOD	10.66	10.66	< LOD	12.78		< LOD	52.42	52.42	< LOD	62.85		< LOD	12.48	12.48	< LOD	14.96		< LOD	26.71	26.71	< LOD	32.03	
883	19/06/2023 15:43	XS011	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown gravelly silt,	16.6	< LOD	9.6	9.6	< LOD	11.51		58.12	32.03	90.15	69.69	108.09		< LOD	11.29	11.29	< LOD	13.54		< LOD	23.09	23.09	< LOD	27.69	
884	19/06/2023 16:11	XS012	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown silt	16.6	14.65	6.93	21.58	17.57	25.88		< LOD	49.17	49.17	< LOD	58.96		< LOD	11.12	11.12	< LOD	13.33		63.67	18.96	82.63	76.34	99.08	
885	19/06/2023 16:14	XS013	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown silt	16.6	< LOD	7.9	7.9	< LOD	9.47		< LOD	41.07	41.07	< LOD	49.24		< LOD	8.69	8.69	< LOD	10.42		367.96	26.63	394.59	441.20	473.13	
886	19/06/2023 16:16	XS014	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown silt	16.6	< LOD	7.15	7.15	< LOD	8.57		< LOD	33.82	33.82	< LOD	40.55		< LOD	8.58	8.58	< LOD	10.29		119.79	16.53	136.32	143.63	163.45	
887	19/06/2023 16:18	XS015	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown silt	16.6	< LOD	7.06	7.06	< LOD	8.47		33.05	19.18	52.23	39.63	62.63		9.91	5.71	15.62	11.88	18.73		211.70	17.01	228.71	253.84	274.23	
888	19/06/2023 16:21	XS016	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown gravelly silt	16.6	< LOD	7.77	7.77	< LOD	9.32		< LOD	38.40	38.40	< LOD	46.04		< LOD	9.14	9.14	< LOD	10.96		284.41	23.17	307.58	341.02	368.80	
889	19/06/2023 16:26	XS017	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown gravelly silt	16.6	< LOD	9.46	9.46	< LOD	11.34		45.41	29.21	74.62	54.45	89.47		< LOD	11.17	11.17	< LOD	13.39		94.27	18.04	112.31	113.03	134.66	
890	19/06/2023 16:28	XS018	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown gravelly silt	16.6	< LOD	12.69	12.69	< LOD	15.22		< LOD	76.98	76.98	< LOD	92.30		< LOD	14.65	14.65	< LOD	17.57		< LOD	36.50	36.50	< LOD	43.76	
891	19/06/2023 16:30	XS019	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown gravelly silt	16.6	< LOD	11.66	11.66	< LOD	13.98		< LOD	63.64	63.64	< LOD	76.31		< LOD	13.88	13.88	< LOD	16.64		< LOD	31.22	31.22	< LOD	37.43	
892	19/06/2023 16:32	XS020	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown gravelly silt	16.6	4.06	2.69	6.75	4.87	8.09		25.65	9.74	35.39	30.76	42.43		< LOD	4.74	4.74	< LOD	5.68		102.42	7.99	110.41	122.81	132.39	
893	19/06/2023 16:34	XS021	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown gravelly silt	16.6	10.26	6.23	16.49	12.30	19.77		48.48	27.11	75.59	58.13	90.64		< LOD	10.62	10.62	< LOD	12.73		71.89	16.15	88.04	86.20	105.56	
894	19/06/2023 16:36	XS022	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown silt	5.2	< LOD	6.31	6.31	< LOD	6.66	6.70	49.51	14.37	63.88	52.23	67.38	29.00	19.32	5.13	24.45	20.38	25.79	19.00	180.31	12.69	193	190.20	203.59	110.00
899	20/06/2023 7:24	XS023	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown fine top soil silt	16.6	< LOD	10.47	10.47	< LOD	12.55		< LOD	45.06	45.06	< LOD	54.03		24.26	8.82	33.08	29.09	39.66		91.58	18.53	110.11	109.81	132.03	
900	20/06/2023 7:28	XS024	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown fine top soil silt	16.6	< LOD	11.9	11.9	< LOD	14.27		< LOD	51.22	51.22	< LOD	61.41		35.43	10.36	45.79	42.48	54.90		135.56	22.98	158.54	162.54	190.10	
901	20/06/2023 7:30	XS025	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown fine top soil silt	16.6	< LOD	18.11	18.11	< LOD	21.71		< LOD	101.68	101.68	< LOD	121.92		< LOD	21.48	21.48	< LOD	25.76		95.74	37.78	133.52	114.80	160.10	
902	20/06/2023 7:33	XS026	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown fine top soil silt	16.6	< LOD	21.38	21.38	< LOD	25.64		< LOD	125.88	125.88	< LOD	150.94		31.81	18.02	49.83	38.14	59.75		< LOD	61.32	61.32	< LOD	73.53	
903	20/06/2023 7:36	XS027	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown fine top soil silt	16.6	< LOD	15.95	15.95	< LOD	19.12		117.57	75.85	193.42	140.97	231.92		< LOD	17.85	17.85	< LOD	21.40		< LOD	53.63	53.63	< LOD	64.30	
904	20/06/2023 7:39	XS028	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown fine top soil silt	16.6	< LOD	6.23	6.23	< LOD	7.47		< LOD	18.10	18.10	< LOD	21.70		23.95	5.00	28.95	28.72	34.71		138.06	10.69	148.75	165.54	178.36	
905	20/06/2023 7:43	XS029	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown fine top soil silt	16.6	< LOD	7.35	7.35	< LOD	8.81		< LOD	35.02	35.02	< LOD	41.99		< LOD	9.07	9.07	< LOD	10.88		39.68	13.27	52.95	47.58	63.49	
906	20/06/2023 7:45	XS030	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown fine top soil silt	21	< LOD	7.04	7.04	< LOD	8.91	3.50	38.94	18.41	57.35	49.29	72.59	18.00	12.09	5.61	17.7	15.30	22.41	31.00	108.70	13.08	121.78	137.59	154.15	94.00
909	20/06/2023 8:00	XS031	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Brown fine top soil silt	16.6	4.07	2.65	6.72	4.88	8.06		< LOD	16.64	16.64	< LOD	19.95		< LOD	4.46	4.46	< LOD	5.35		142.17	10.25	152.42	170.47	182.76	
910	20/06/2023 8:02	XS032	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	9.67	9.67	< LOD	11.59		< LOD	45.57	45.57	< LOD	54.64		< LOD	11.11	11.11	< LOD	13.32		< LOD	23.14	23.14	< LOD	27.75	
911	20/06/2023 8:04	XS033	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand medium sized stones	16.6	< LOD	12.49	12.49	< LOD	14.98		< LOD	68.84	68.84	< LOD	82.54		< LOD	14.41	14.41	< LOD	17.28		< LOD	31.61	31.61	< LOD	37.90	
912	20/06/2023 8:07	XS034	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silt grey brown colour	16.6	< LOD	8.25	8.25	< LOD	9.89		< LOD	38.47	38.47	< LOD	46.13		< LOD	9.88	9.88	< LOD	11.85		28.17	13.69	41.86	33.78	50.19	
913	20/06/2023 8:09	XS035	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand brown	16.6	< LOD	7.69	7.69	< LOD	9.22		< LOD	34.72	34.72	< LOD	41.63		< LOD	8.81	8.81	< LOD	10.56		19.19	11.90	31.09	23.01	37.28	
914	20/06/2023 8:12	XS036	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand brown	16.6	< LOD	10.55	10.55	< LOD	12.65		< LOD	66.34	66.34	< LOD	79.54		< LOD	13.36	13.36	< LOD	16.02		< LOD	29.29	29.29	< LOD	35.12	
915	20/06/2023 8:14	XS037	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand brown	16.6	< LOD	7.67	7.67	< LOD	9.20		49.33	27.04	76.37	59.15	91.57		< LOD	8.63	8.63	< LOD	10.35		< LOD	19.12	19.12	< LOD	22.93	
916	20/06/2023 8:16	XS038	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silt brown	16.6	< LOD	7.74	7.74	< LOD	9.28		38.94	24.82	63.76	46.69	76.45		< LOD	8.77	8.77	< LOD	10.52		30.74	12.88	43.62	36.86	52.30	
917	20/06/2023 8:18	XS039	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand brown	13	9.92	5.98	15.90	11.40	18.28	4.40	44.48	22.92	67.40	51.13	77.47	22.00	21.15	6.96	28.11	24.31	32.31	26.00	61.58	13.59	75.17	70.79	86.40	39.00
918	20/06/2023 8:22	XS040	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand brown	16.6	< LOD	9.16	9.16	< LOD	10.98		< LOD	46.81	46.81	< LOD	56.13		< LOD	10.91	10.91	< LOD	13.08		31.25	16.70	47.95	37.47	57.49	
921	20/06/2023 8:38	XS041	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand brown	16.6	< LOD	10.39	10.39	< LOD	12.46		88.03	46.84	134.87	105.55	161.71		< LOD	12.19	12.19	< LOD	14.62		< LOD	31.64	31.64	< LOD	37.94	
922	20/06/2023 8:41	XS042	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand brown medium sized gravel	16.6	< LOD	10.17	10.17	< LOD	12.19		< LOD	53.42	53.42	< LOD	64.05		< LOD	11.69	11.69	< LOD	14.02		< LOD	25.47	25.47	< LOD	30.54	
923	20/06/2023 8:43	XS043	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand brown medium sized gravel	16.6	< LOD	13.78	13.78	< LOD	16.52		< LOD	83.38	83.38	< LOD	99.98		< LOD	14.99	14.99	< LOD	17.97		< LOD	38.82	38.82	< LOD	46.55	
924	20/06/2023 8:45	XS044	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand brown medium to large sized gravel	16.6	< LOD	13.74	13.74	< LOD	16.47		< LOD	80.54	80.54	< LOD	96.57		< LOD	16.03	16.03	< LOD	19.22		< LOD	39.55	39.55	< LOD	47.42	
925	20/06/2023 8:48	XS045	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Silty sand brown	16.6	< LOD	7.31	7.31	< LOD	8.76		< LOD	31.69	31.69	< LOD	38.00		< LOD	8.60	8.60	< LOD	10.31		77.50	13.74	91.24	92.93	109.40	
926	20/06/2023 8:50	XS046	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silt brown	16.6	< LOD	6.07	6.07	< LOD	7.28		< LOD	27.31	27.31	< LOD	32.75		< LOD	7.19	7.19	< LOD	8.62		43.23	10.76	53.99	51.83	64.74	
927	20/06/2023 8:53	XS047	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silt brown	16.6	< LOD	4.34	4.34	< LOD	5.20		< LOD	18.49	18.49	< LOD	22.17		< LOD	5.12	5.12	< LOD	6.14		40.66	7.82	48.48	48.75	58.13	
928	20/06/2023 8:56	XS048	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF		16.6	4.72	3.05	7.77	5.66	9.32		16.34	9.82	26.16	19.59	31.37		8.29	3.64	11.93	9.94	14.30		171.49	10.04	181.53	205.62	217.66	
929	20/06/2023 8:59	XS049	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silt brown	16.6	< LOD	10.78	10.78	< LOD	12.93		< LOD	58.09	58.09	< LOD	69.65		< LOD	12.59	12.59	< LOD	15.10		< LOD	27.39	27.39	< LOD	32.84	
930	20/06/2023 9:01	XS050	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silt brown	24	6.09	3.61	9.70	8.01	12.76	9.60	< LOD	16.48	16.48	< LOD	21.68	13.00	14.00	4.25	18.25	18.42	24.01	43.00	91.59	8.74	100.33	120.51	132.01	95.00
933	20/06/2023 9:10	XS051	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	6.25	6.25	< LOD	7.49		< LOD	29.60	29.60	< LOD	35.49		< LOD	7.33	7.33	< LOD	8.79		24.79	10.53	35.32	29.72	42.35	
934	20/06/2023 9:12	XS052	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	6.74	6.74	< LOD	8.08		< LOD	31.51	31.51	< LOD	37.78		< LOD	8.00	8.00	< LOD	9.59		69.95	13.20	83.15	83.87	99.70	
935	20/06/2023 9:19	XS053	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silty sand	16.6	< LOD	9.96	9.96	< LOD	11.94		< LOD	43.16	43.16	< LOD	51.75		13.42	7.98	21.4	16.09	25.66		43.52	16.20	59.72	52.18	71.61	
936	20/06/2023 9:21	XS054	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silt	16.6	< LOD	7.73	7.73	< LOD	9.27		< LOD	38.94	38.94	< LOD	46.69		< LOD	9.65	9.65	< LOD	11.57		52.51	15.58	68.09	62.96	81.64	
937	20/06/2023 9:25	XS055	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silt	16.6	< LOD	6.74	6.74	< LOD	8.08		< LOD	21.61	21.61	< LOD	25.91		19.03	5.40	24.43	22.82	29.29		53.08	9.16	62.24	63.65	74.63	
938	20/06/2023 9:28	XS056	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silty sand	16.6	< LOD	8.63	8.63	< LOD	10.35		< LOD	41.73	41.73	< LOD	50.04		< LOD	10.33	10.33	< LOD	12.39		31.60	14.96	46.56	37.89	55.83	
939	20/06/2023 9:32	XS057	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silt dark brown	16.6	< LOD	4.15	4.15	< LOD	4.98		< LOD	17.00	17.00	< LOD	20.38		< LOD	5.04	5.04	< LOD	6.04		33.25	6.83	40.08	39.87	48.06	
940	20/06/2023 9:35	XS058	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silt dark brown	16.6	< LOD	5.28	5.28	< LOD	6.33		< LOD	17.44	17.44	< LOD	20.91		13.07	4.37	17.44	15.67	20.91		43.81	7.39	51.2	52.53	61.39	
941	20/06/2023 9:38	XS059	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silt dark brown	16.6	< LOD	8.46	8.46	< LOD	10.14		< LOD	39.54	39.54	< LOD	47.41		< LOD	9.73	9.73	< LOD	11.67		< LOD	18.22	18.22	< LOD	21.85	
942	20/06/2023 9:40	XS060	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silt dark brown	13	< LOD	11.12	11.12	< LOD	12.78	14.00	< LOD	27.45	27.45	< LOD	31.55	17.00	78.92	9.41	88.33	90.71	101.53	130.00	41.58	10.67	52.25	47.79	60.06	56.00
945	20/06/2023 9:52	XS061	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silty sand dark brown	16.6	< LOD	8.39	8.39	< LOD	10.06		< LOD	31.07	31.07	< LOD	37.25		20.37	6.74	27.11	24.42	32.51		84.65	13.81	98.46	101.50	118.06	
946	20/06/2023 9:55	XS062	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silty sand	16.6	< LOD	7.36	7.36	< LOD	8.82		< LOD	24.24	24.24	< LOD	29.06		26.43	6.19	32.62	31.69	39.11		41.95	9.54	51.49	50.30	61.74	
947	20/06/2023 9:58	XS063	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silty sand	16.6	< LOD	10.59	10.59	< LOD	12.70		< LOD	45.39	45.39	< LOD	54.42		12.66	8.12	20.78	15.18	24.92		27.69	15.71	43.4	33.20	52.04	
948	20/06/2023 10:00	XS064	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silty sand	16.6	< LOD	4.97	4.97	< LOD	5.96		< LOD	17.64	17.64	< LOD	21.15		< LOD	5.95	5.95	< LOD	7.13		42.00	7.32	49.32	50.36	59.14	
949	20/06/2023 10:03	XS065	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silty sand	16.6	< LOD	10.45	10.45	< LOD	12.53		44.21	27.35	71.56	53.01	85.80		33.21	8.79	42	39.82	50.36		37.70	14.46	52.16	45.20	62.54	
950	20/06/2023 10:05	XS066	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silty sand light brown small gravel pieces	16.6	< LOD	9.44	9.44	< LOD	11.32		< LOD	56.21	56.21	< LOD	67.40		< LOD	11.04	11.04	< LOD	13.24		< LOD	24.08	24.08	< LOD	28.87	
951	20/06/2023 10:08	XS067	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silty sand light brown small gravel pieces	16.6	< LOD	15.2	15.2	< LOD	18.23		< LOD	87.69	87.69	< LOD	105.14		< LOD	18.03	18.03	< LOD	21.62		75.80	32.24	108.04	90.89	129.54	
952	20/06/2023 10:10	XS068	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silt medium gravel	16.6	15.38	7.6	22.98	18.44	27.55		< LOD	65.01	65.01	< LOD	77.95		< LOD	11.62	11.62	< LOD	13.93		< LOD	27.91	27.91	< LOD	33.47	
953	20/06/2023 10:13	XS069	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silty sand	16.6	< LOD	5.21	5.21	< LOD	6.25		< LOD	22.15	22.15	< LOD	26.56		< LOD	6.51	6.51	< LOD	7.81		42.25	9.11	51.36	50.66	61.58	
954	20/06/2023 10:16	XS070	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silty sand	34	< LOD	9.64	9.64	< LOD	14.61	7.30	< LOD	34.83	34.83	< LOD	52.77	23.00	30.81	7.95	38.76	46.68	58.73	91.00	30.95	12.40	43.35	46.89	65.68	160.00
957	20/06/2023 10:23	XS071	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silt	16.6	< LOD	26.6	26.6	< LOD	31.89		< LOD	170.99	170.99	< LOD	205.02		< LOD	29.97	29.97	< LOD	35.94		< LOD	63.24	63.24	< LOD	75.83	
958	20/06/2023 10:25	XS072	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silt	16.6	< LOD	7.46	7.46	< LOD	8.94		< LOD	23.93	23.93	< LOD	28.69		24.33	6.23	30.56	29.17	36.64		27.38	9.00	36.38	32.83	43.62	
959	20/06/2023 11:20	XS073	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silty sand	16.6	< LOD	8.83	8.83	< LOD	10.59		45.99	14.19	60.18	55.14	72.16		61.55	7.47	69.02	73.80	82.76		284.09	16.03	300.12	340.64	359.86	
960	20/06/2023 11:24	XS074	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silt	16.6	< LOD	6.64	6.64	< LOD	7.96		21.46	13.42	34.88	25.73	41.82		31.74	5.66	37.4	38.06	44.84		88.33	9.75	98.08	105.91	117.60	
961	20/06/2023 11:26	XS075	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silt	16.6	< LOD	9.68	9.68	< LOD	11.61		38.92	22.67	61.59	46.67	73.85		34.18	7.96	42.14	40.98	50.53		138.00	16.55	154.55	165.47	185.31	
962	20/06/2023 11:28	XS076	Goulburn Wheat Yards Assessment	Ottiwell Street (west)	In-situ - XRF	Gravelly silt	16.6	11.3	5.3	16.60	13.55	19.90		< LOD	24.19	24.19	< LOD	29.00		27.81	6.16	33.97	33.35	40.73		110.11	12.06	122.17	132.03	146.48	
963	20/06/2023 11:31	XS077	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF	Gravelly silty sand	16.6	< LOD	11.16	11.16	< LOD	13.38		43.38	23.98	67.36	52.01	80.77		48.83	9.10	57.93	58.55	69.46		218.25	19.94	238.19	261.69	285.60	
964	20/06/2023 11:34	XS078	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF	Gravelly silty sand	16.6	11.84	5.72	17.56	14.20	21.06		24.93	12.38	37.31	29.89	44.74		71.85	6.98	78.83	86.15	94.52		253.69	13.59	267.28	304.18	320.48	
965	20/06/2023 11:37	XS079	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF	Gravelly silt	16.6	< LOD	6.24	6.24	< LOD	7.48		35.00	21.17	56.17	41.97	67.35		< LOD	7.20	7.20	< LOD	8.63		42.05	11.89	53.94	50.42	64.68	
966	20/06/2023 11:43	DRAIN SED01	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF	Sediment from drain DS	16.6	< LOD	18.4	18.4	< LOD	22.06		< LOD	106.67	106.67	< LOD	127.90		27.86	15.41	43.27	33.41	51.88		< LOD	46.42	46.42	< LOD	55.66	
967	20/06/2023 11:46	XS080	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF	Silty gravelly sand	29	< LOD	9.19	9.19	< LOD	12.94	7.20	47.16	12.55	59.71	66.42	84.10	57.00	104.03	7.81	111.84	146.52	157.52	180.00	364.96	15.50	380.46	514.03	535.86	540.00
970	20/06/2023 11:55	XS081	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF	Silty gravelly sand	16.6	< LOD	9.02	9.02	< LOD	10.82		< LOD	165.93	165.93	< LOD	198.96		< LOD	59.82	59.82	< LOD	71.73		< LOD	283.72	283.72	< LOD	340.19	
971	20/06/2023 12:00	XS081	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF	Silty gravelly sand	16.6	< LOD	10.42	10.42	< LOD	12.49		< LOD	64.02	64.02	< LOD	76.76		< LOD	12.30	12.30	< LOD	14.75		< LOD	29.87	29.87	< LOD	35.82	
972	20/06/2023 12:03	XS082	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF		16.6	< LOD	11.68	11.68	< LOD	14.00		< LOD	32.93	32.93	< LOD	39.48		72.41	10.00	82.41	86.82	98.81		132.39	16.19	148.58	158.74	178.15	
973	20/06/2023 12:06	XS083	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF	Silty gravelly sand	16.6	< LOD	7.17	7.17	< LOD	8.60		< LOD	19.91	19.91	< LOD	23.87		36.44	5.97	42.41	43.69	50.85		119.21	10.83	130.04	142.94	155.92	
974	20/06/2023 12:09	XS084	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF	Silty gravelly sand	16.6	< LOD	9.95	9.95	< LOD	11.93		< LOD	38.03	38.03	< LOD	45.60		27.85	8.11	35.96	33.39	43.12		185.57	19.85	205.42	222.51	246.31	
975	20/06/2023 12:12	XS085	Goulburn Wheat Yards Assessment	Ottiwell Street (east)	In-situ - XRF	Silty sand	16.6	< LOD	7.69	7.69	< LOD	9.22		< LOD	28.32	28.32	< LOD	33.96		14.37	6.00	20.37	17.23	24.42		44.27	11.10	55.37	53.08	66.39	
976	20/06/2023 12:16	XS086	Goulburn Wheat Yards Assessment	King Street	In-situ - XRF	Silty sand	16.6	< LOD	8.39	8.39	< LOD	10.06		< LOD	23.97	23.97	< LOD	28.74		38.40	6.78	45.18	46.04	54.17		152.03	13.67	165.7	182.29	198.68	
977	20/06/2023 12:18	XS087	Goulburn Wheat Yards Assessment	King Street	In-situ - XRF	Gravelly silt	16.6	< LOD	5.32	5.32	< LOD	6.38		< LOD	14.48	14.48	< LOD	17.36		24.65	4.48	29.13	29.56	34.93		81.30	7.75	89.05	97.48	106.77	
978	20/06/2023 12:20	XS088	Goulburn Wheat Yards Assessment	King Street	In-situ - XRF	Gravelly silt	16.6	< LOD	13.31	13.31	< LOD	15.96		< LOD	39.83	39.83	< LOD	47.76		72.29	11.20	83.49	86.68	100.11		293.85	24.38	318.23	352.34	381.57	
979	20/06/2023 12:25	XS088	Goulburn Wheat Yards Assessment	King Street	In-situ - XRF	Gravelly silt	16.6	< LOD	27.87	27.87	< LOD	33.42		< LOD	152.98	152.98	< LOD	183.43		< LOD	28.02	28.02	< LOD	33.60		282.97	71.71	354.68	339.29	425.29	
980	20/06/2023 12:26	XS089	Goulburn Wheat Yards Assessment	King Street	In-situ - XRF	Gravelly silt	16.6	< LOD	9.1	9.1	< LOD	10.91		49.49	25.10	74.59	59.34	89.44		16.34	7.12	23.46	19.59	28.13		448.19	27.12	475.31	537.40	569.92	
981	20/06/2023 12:28	XS090	Goulburn Wheat Yards Assessment	King Street	In-situ - XRF	Gravelly silt	31	< LOD	8.21	8.21	< LOD	11.90	3.20	25.92	14.97	40.89	37.57	59.26	28.00	51.64	6.94	58.58	74.84	84.90	130.00	286.95	16.20	303.15	415.87	439.35	470.00
984	20/06/2023 12:45	XS091	Goulburn Wheat Yards Assessment	King Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	10.69	10.69	< LOD	12.82		< LOD	31.25	31.25	< LOD	37.47		59.75	9.06	68.81	71.64	82.51		138.89	15.84	154.73	166.53	185.53	
985	20/06/2023 12:48	XS092	Goulburn Wheat Yards Assessment	King Street	In-situ - XRF	Silty sand	16.6	< LOD	8.13	8.13	< LOD	9.75		22.08	12.69	34.77	26.47	41.69		65.16	6.83	71.99	78.13	86.32		799.82	23.16	822.98	959.02	986.79	
986	20/06/2023 12:50	XS093	Goulburn Wheat Yards Assessment	King Street	In-situ - XRF	Silty sand	16.6	< LOD	9.82	9.82	< LOD	11.77		< LOD	24.92	24.92	< LOD	29.88		65.71	8.20	73.91	78.79	88.62		146.89	13.64	160.53	176.13	192.48	
987	20/06/2023 13:18	XS094	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	28.71	28.71	< LOD	34.42		< LOD	99.72	99.72	< LOD	119.57		45.92	25.07	70.99	55.06	85.12		126.16	50.50	176.66	151.27	211.82	
988	20/06/2023 13:21	XS095	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	21.9	21.9	< LOD	26.26		< LOD	124.07	124.07	< LOD	148.76		30.04	18.16	48.2	36.02	57.79		< LOD	57.77	57.77	< LOD	69.27	
989	20/06/2023 13:23	XS096	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	9.44	9.44	< LOD	11.32		< LOD	26.06	26.06	< LOD	31.25		57.69	8.02	65.71	69.17	78.79		106.37	12.76	119.13	127.54	142.84	
990	20/06/2023 13:25	XS097	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	8.27	8.27	< LOD	9.92		37.94	14.82	52.76	45.49	63.26		49.59	6.78	56.37	59.46	67.59		91.98	10.50	102.48	110.29	122.88	
991	20/06/2023 13:28	XS098	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	6.53	6.53	< LOD	7.83		27.27	17.06	44.33	32.70	53.15		10.16	5.23	15.39	12.18	18.45		73.83	11.18	85.01	88.53	101.93	
992	20/06/2023 13:30	XS099	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	8.32	8.32	< LOD	9.98		38.22	20.78	59.00	45.83	70.74		24.08	6.88	30.96	28.87	37.12		66.93	12.62	79.55	80.25	95.38	
993	20/06/2023 13:33	XS100	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	13	< LOD	9.99	9.99	< LOD	11.48	4.50	27.10	13.39	40.49	31.15	46.54	25.00	99.81	8.34	108.15	114.72	124.31	150.00	172.31	12.30	184.61	198.06	212.20	160.00
996	20/06/2023 13:47	XS101	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	3.26	3.26	< LOD	3.91		< LOD	14.44	14.44	< LOD	17.31		< LOD	3.89	3.89	< LOD	4.66		154.08	9.54	163.62	184.75	196.19	
997	20/06/2023 13:49	XS102	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	2.46	2.46	< LOD	2.95		< LOD	10.16	10.16	< LOD	12.18		< LOD	3.01	3.01	< LOD	3.61		107.48	6.73	114.21	128.87	136.94	
998	20/06/2023 13:51	XS103	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	11.37	11.37	< LOD	13.63		< LOD	56.01	56.01	< LOD	67.16		14.68	9.32	24	17.60	28.78		< LOD	29.28	29.28	< LOD	35.11	
999	20/06/2023 13:53	XS104	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	9.99	9.99	< LOD	11.98		< LOD	48.74	48.74	< LOD	58.44		< LOD	12.31	12.31	< LOD	14.76		42.55	17.46	60.01	51.02	71.95	
1000	20/06/2023 13:55	XS105	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	11.19	11.19	< LOD	13.42		< LOD	59.64	59.64	< LOD	71.51		< LOD	12.87	12.87	< LOD	15.43		< LOD	28.93	28.93	< LOD	34.69	
1001	20/06/2023 13:58	XS106	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	9.68	9.68	< LOD	11.61		< LOD	36.46	36.46	< LOD	43.72		30.37	8.33	38.7	36.41	46.40		89.73	16.19	105.92	107.59	127.00	
1002	20/06/2023 14:00	XS107	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	7.79	7.79	< LOD	9.34		< LOD	30.06	30.06	< LOD	36.04		16.83	6.39	23.22	20.18	27.84		106.48	14.16	120.64	127.67	144.65	
1003	20/06/2023 14:02	XS108	Goulburn Wheat Yards Assessment	Cooma Avenue	In-situ - XRF	Gravelly silt	16.6	< LOD	8.34	8.34	< LOD	10.00		< LOD	26.49	26.49	< LOD	31.76		27.72	6.78	34.5	33.24	41.37		99.49	12.98	112.47	119.29	134.86	
1004	20/06/2023 14:43	XS109	Goulburn Wheat Yards Assessment	Lansdowne Street	In-situ - XRF	Gravelly silt	16.6	< LOD	9.08	9.08	< LOD	10.89		< LOD	36.28	36.28	< LOD	43.50		< LOD	11.16	11.16	< LOD	13.38		24.60	13.99	38.59	29.50	46.27	
1005	20/06/2023 14:46	XS110	Goulburn Wheat Yards Assessment	Lansdowne Street	In-situ - XRF	Gravelly silt	15	< LOD	5.42	5.42	< LOD	6.38	2.70	43.85	15.43	59.28	51.59	69.74	56.00	< LOD	6.40	6.40	< LOD	7.53	22.00	200.65	14.03	214.68	236.06	252.56	140.00
1008	20/06/2023 14:55	XS111	Goulburn Wheat Yards Assessment	Lansdowne Street	In-situ - XRF	Gravelly silt	16.6	6.29	3.48	9.77	7.54	11.71		15.31	9.43	24.74	18.36	29.66		19.94	4.16	24.1	23.91	28.90		295.48	12.49	307.97	354.29	369.27	
1009	20/06/2023 14:57	XS112	Goulburn Wheat Yards Assessment	Lansdowne Street	In-situ - XRF	Gravelly silt	16.6	< LOD	7.15	7.15	< LOD	8.57		< LOD	18.36	18.36	< LOD	22.01		43.48	6.01	49.49	52.13	59.34		85.84	9.18	95.02	102.93	113.93	
1010	20/06/2023 15:00	XS113	Goulburn Wheat Yards Assessment	Lansdowne Street	In-situ - XRF	Gravelly silt	16.6	< LOD	6.78	6.78	< LOD	8.13		< LOD	23.16	23.16	< LOD	27.77		21.27	5.75	27.02	25.50	32.40		49.43	9.50	58.93	59.27	70.66	
1011	20/06/2023 15:02	XS114	Goulburn Wheat Yards Assessment	Lansdowne Street	In-situ - XRF	Gravelly silt	16.6	< LOD	11.17	11.17	< LOD	13.39		< LOD	37.13	37.13	< LOD	44.52		39.92	9.06	48.98	47.87	58.73		87.25	16.10	103.35	104.62	123.92	
1012	20/06/2023 15:04	XS115	Goulburn Wheat Yards Assessment	Lansdowne Street	In-situ - XRF	Gravelly silt	16.6	< LOD	5.86	5.86	< LOD	7.03		< LOD	19.76	19.76	< LOD	23.69		12.81	4.75	17.56	15.36	21.06		51.70	8.56	60.26	61.99	72.25	
1013	20/06/2023 15:07	XS116	Goulburn Wheat Yards Assessment	Lansdowne Street	In-situ - XRF	Gravelly silt	16.6	< LOD	10.05	10.05	< LOD	12.05		< LOD	49.84	49.84	< LOD	59.76		< LOD	12.14	12.14	< LOD	14.56		59.99	19.10	79.09	71.93	94.83	
1014	20/06/2023 15:10	XS117	Goulburn Wheat Yards Assessment	Lansdowne Street	In-situ - XRF	Gravelly silt	16.6	< LOD	10.02	10.02	< LOD	12.01		< LOD	47.40	47.40	< LOD	56.83		15.54	8.51	24.05	18.63	28.84		32.34	16.88	49.22	38.78	59.02	
1015	20/06/2023 15:12	XS118	Goulburn Wheat Yards Assessment	Lansdowne Street	In-situ - XRF	Gravelly silt	16.6	< LOD	10.87	10.87	< LOD	13.03		< LOD	73.20	73.20	< LOD	87.77		< LOD	12.64	12.64	< LOD	15.16		< LOD	31.39	31.39	< LOD	37.64	
1016	20/06/2023 15:20	XS119	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	8.53	8.53	< LOD	10.23		< LOD	33.63	33.63	< LOD	40.32		11.08	6.60	17.68	13.29	21.20		160.95	17.69	178.64	192.99	214.20	
1017	20/06/2023 15:23	XS120	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	17	< LOD	6.28	6.28	< LOD	7.57	5.20	< LOD	18.08	18.08	< LOD	21.78	16.00	27.13	5.20	32.33	32.69	38.95	55.00	107.27	9.87	117.14	129.24	141.13	120.00
1020	20/06/2023 15:33	XS121	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	3.89	2.56	6.45	4.66	7.73		16.68	9.18	25.86	20.00	31.01		< LOD	4.49	4.49	< LOD	5.38		157.97	9.20	167.17	189.41	200.44	
1021	20/06/2023 15:36	XS122	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	5.29	5.29	< LOD	6.34		< LOD	17.92	17.92	< LOD	21.49		12.13	4.42	16.55	14.54	19.84		199.14	12.43	211.57	238.78	253.68	
1022	20/06/2023 15:38	XS123	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	4.45	4.45	< LOD	5.34		24.45	9.47	33.92	29.32	40.67		10.71	3.62	14.33	12.84	17.18		106.61	7.97	114.58	127.83	137.39	
1023	20/06/2023 15:40	XS124	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	5.38	5.38	< LOD	6.45		< LOD	19.85	19.85	< LOD	23.80		< LOD	6.40	6.40	< LOD	7.67		43.62	8.16	51.78	52.30	62.09	
1024	20/06/2023 15:42	XS125	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	5.18	5.18	< LOD	6.21		< LOD	19.17	19.17	< LOD	22.99		< LOD	6.06	6.06	< LOD	7.27		68.18	8.88	77.06	81.75	92.40	
1025	20/06/2023 15:44	XS126	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	7.28	7.28	< LOD	8.73		< LOD	33.83	33.83	< LOD	40.56		< LOD	8.92	8.92	< LOD	10.70		33.34	12.31	45.65	39.98	54.74	
1026	20/06/2023 15:46	XS127	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silty sand	16.6	< LOD	9.01	9.01	< LOD	10.80		< LOD	45.03	45.03	< LOD	53.99		< LOD	10.80	10.80	< LOD	12.95		41.59	16.61	58.2	49.87	69.78	
1027	20/06/2023 15:48	XS128	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silty sand	16.6	5.35	3.11	8.46	6.41	10.14		< LOD	13.09	13.09	< LOD	15.70		13.09	3.73	16.82	15.70	20.17		132.50	8.53	141.03	158.87	169.10	
1028	20/06/2023 15:50	XS129	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silty sand	16.6	< LOD	9.4	9.4	< LOD	11.27		< LOD	41.52	41.52	< LOD	49.78		< LOD	10.93	10.93	< LOD	13.11		32.21	15.01	47.22	38.62	56.62	
1029	20/06/2023 15:53	XS130	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silty sand	14	< LOD	5.89	5.89	< LOD	6.85	3.10	22.52	12.33	34.85	26.19	40.52	13.00	19.91	4.85	24.76	23.15	28.79	41.00	233.29	13.18	246.47	271.27	286.59	170.00
1032	20/06/2023 16:04	XS131	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silty sand	16.6	< LOD	11.06	11.06	< LOD	13.26		< LOD	48.51	48.51	< LOD	58.17		15.83	8.73	24.56	18.98	29.45		25.13	16.73	41.86	30.13	50.19	
1033	20/06/2023 16:06	XS132	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	21.36	21.36	< LOD	25.61		< LOD	132.65	132.65	< LOD	159.05		< LOD	23.65	23.65	< LOD	28.36		< LOD	55.83	55.83	< LOD	66.94	
1034	20/06/2023 16:08	XS133	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	12.79	12.79	< LOD	15.34		< LOD	57.56	57.56	< LOD	69.02		26.03	10.47	36.5	31.21	43.76		50.44	20.88	71.32	60.48	85.52	
1035	20/06/2023 16:11	XS134	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand medium gravel	16.6	< LOD	11.69	11.69	< LOD	14.02		< LOD	55.92	55.92	< LOD	67.05		< LOD	13.66	13.66	< LOD	16.38		< LOD	26.74	26.74	< LOD	32.06	
1036	20/06/2023 16:13	XS135	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	10.51	10.51	< LOD	12.60		< LOD	47.34	47.34	< LOD	56.76		13.35	8.51	21.86	16.01	26.21		73.28	18.84	92.12	87.87	110.46	
1037	20/06/2023 16:15	XS136	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand medium sized gravel	16.6	< LOD	6.57	6.57	< LOD	7.88		< LOD	32.60	32.60	< LOD	39.09		< LOD	7.75	7.75	< LOD	9.29		30.46	12.00	42.46	36.52	50.91	
1038	20/06/2023 16:17	XS137	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand medium sized gravel	16.6	< LOD	13.07	13.07	< LOD	15.67		< LOD	58.06	58.06	< LOD	69.62		27.78	10.59	38.37	33.31	46.01		52.98	20.83	73.81	63.53	88.50	
1039	20/06/2023 16:19	XS138	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand medium sized gravel	16.6	< LOD	9.13	9.13	< LOD	10.95		< LOD	52.46	52.46	< LOD	62.90		< LOD	10.56	10.56	< LOD	12.66		< LOD	24.79	24.79	< LOD	29.72	
1040	20/06/2023 16:22	XS139	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand medium sized light brown	16.6	< LOD	8.12	8.12	< LOD	9.74		< LOD	38.59	38.59	< LOD	46.27		< LOD	9.72	9.72	< LOD	11.65		< LOD	17.82	17.82	< LOD	21.37	
1041	20/06/2023 16:25	XS140	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand medium sized light brown	13	< LOD	8.75	8.75	< LOD	10.06	3.80	37.34	24.57	61.91	42.92	71.16	21.00	17.95	7.28	25.23	20.63	29.00	20.00	132.02	17.37	149.39	151.75	171.71	99.00
1044	20/06/2023 16:38	XS141	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	12.04	12.04	< LOD	14.44		< LOD	76.71	76.71	< LOD	91.98		< LOD	14.34	14.34	< LOD	17.19		< LOD	35.24	35.24	< LOD	42.25	
1045	20/06/2023 16:40	XS142	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	11.65	11.65	< LOD	13.97		< LOD	67.63	67.63	< LOD	81.09		< LOD	12.87	12.87	< LOD	15.43		< LOD	32.18	32.18	< LOD	38.59	
1046	20/06/2023 16:42	XS143	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	12.02	12.02	< LOD	14.41		337.80	45.08	382.88	405.04	459.09		21.87	9.62	31.49	26.22	37.76		< LOD	26.32	26.32	< LOD	31.56	
1047	20/06/2023 16:44	XS144	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	6.13	6.13	< LOD	7.35		< LOD	21.82	21.82	< LOD	26.16		12.81	5.00	17.81	15.36	21.35		106.75	11.24	117.99	128.00	141.47	
1050	21/06/2023 7:26	XS145	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt	16.6	< LOD	4.96	4.96	< LOD	5.95		< LOD	19.94	19.94	< LOD	23.91		< LOD	6.07	6.07	< LOD	7.28		59.50	8.64	68.14	71.34	81.70	
1051	21/06/2023 7:28	XS146	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt	16.6	< LOD	515.94	515.94	< LOD	618.63		< LOD	14728.89	14728.89	< LOD	NC		< LOD	1439.79	1439.79	< LOD	NC		< LOD	19964.13	19964.13	< LOD	NC	
1052	21/06/2023 7:29	XS146	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt	16.6	< LOD	8.11	8.11	< LOD	9.72		< LOD	53.73	53.73	< LOD	64.42		< LOD	8.97	8.97	< LOD	10.76		< LOD	25.49	25.49	< LOD	30.56	
1053	21/06/2023 7:32	XS147	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	10.06	10.06	< LOD	12.06		87.32	46.02	46.02	104.70	55.18		< LOD	11.65	11.65	< LOD	13.97		< LOD	32.26	32.26	< LOD	38.68	
1054	21/06/2023 7:36	XS148	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	12.48	12.48	< LOD	14.96		< LOD	86.63	86.63	< LOD	103.87		< LOD	14.73	14.73	< LOD	17.66		< LOD	40.00	40.00	< LOD	47.96	

TABLE 2:
Recreational C - 'Worst Case' Soil Sampling Results

Reading No:	Sample date:	Sample ID:	Project Name:	Road:	Sampling Method:	Sample Description	Average Moisture Content (%)	Arsenic (ppm)	Arsenic Error	Worst Case Arsenic (ppm)	Arsenic Corrected (ppm)	Worst Case Arsenic Corrected (ppm)	Arsenic Lab (mg/kg)	Copper (ppm)	Copper Error (ppm)	Worst Case Copper (ppm)	Copper Corrected (ppm)	Worst Case Copper Corrected (ppm)	Copper Lab (mg/kg)	Lead (ppm)	Lead Error (ppm)	Worst Case Lead (ppm)	Lead Corrected (ppm)	Worst Case Lead Corrected (ppm)	Lead Lab (mg/kg)	Zinc (ppm)	Zinc Error	Worst Case Zinc (ppm)	Zinc Corrected (ppm)	Worst Case Zinc Corrected (ppm)	Zinc Lab (mg/kg)
				NEPM 2013 HIL C Recreational							300						17000						600						30000		
				NEPM 2013 EIL Residential /Public Open Space							100						95						1100						70		
1055	21/06/2023 7:38	XS149	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	6.53	6.53	< LOD	7.83		34.13	18.07	52.20	40.92	62.59		10.20	5.39	15.59	12.23	18.69		187.30	15.49	202.79	224.58	243.15	
1056	21/06/2023 7:41	XS150	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	8.6	< LOD	11.01	11.01	< LOD	12.05	8.90	< LOD	65.03	65.03	< LOD	71.15	67.00	< LOD	12.83	12.83	< LOD	14.04	68.00	159.47	28.04	187.51	174.47	205.15	130.00
1059	21/06/2023 7:53	XS151	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	17.43	17.43	< LOD	20.90		< LOD	102.26	102.26	< LOD	122.61		< LOD	20.67	20.67	< LOD	24.78		< LOD	46.54	46.54	< LOD	55.80	
1060	21/06/2023 7:56	XS152	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	9.48	9.48	< LOD	11.37		< LOD	42.52	42.52	< LOD	50.98		< LOD	11.09	11.09	< LOD	13.30		60.86	16.34	77.2	72.97	92.57	
1061	21/06/2023 7:59	XS153	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	22.82	22.82	< LOD	27.36		< LOD	150.90	150.90	< LOD	180.94		< LOD	26.01	26.01	< LOD	31.19		< LOD	67.18	67.18	< LOD	80.55	
1062	21/06/2023 8:02	XS154	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	30.57	30.57	< LOD	36.65		< LOD	202.96	202.96	< LOD	243.36		< LOD	33.56	33.56	< LOD	40.24		< LOD	100.79	100.79	< LOD	120.85	
1063	21/06/2023 8:05	XS155	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	31.44	20.94	20.94	37.70	25.11		< LOD	134.13	134.13	< LOD	160.83		86.12	24.15	110.27	103.26	132.22		148.31	50.92	199.23	177.83	238.88	
1064	21/06/2023 8:13	XS156	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	10.55	10.55	< LOD	12.65		< LOD	58.35	58.35	< LOD	69.96		< LOD	12.58	12.58	< LOD	15.08		< LOD	28.79	28.79	< LOD	34.52	
1065	21/06/2023 8:16	XS157	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	9.45	9.45	< LOD	11.33		< LOD	58.27	58.27	< LOD	69.87		< LOD	10.26	10.26	< LOD	12.30		< LOD	26.63	26.63	< LOD	31.93	
1066	21/06/2023 8:18	XS158	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	13.62	7.54	21.16	16.33	25.37		< LOD	61.35	61.35	< LOD	73.56		< LOD	11.80	11.80	< LOD	14.15		41.24	21.15	62.39	49.45	74.81	
1067	21/06/2023 8:21	XS159	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand medium sized gravel	16.6	< LOD	14.26	14.26	< LOD	17.10		< LOD	84.93	84.93	< LOD	101.83		< LOD	16.05	16.05	< LOD	19.24		< LOD	36.87	36.87	< LOD	44.21	
1068	21/06/2023 8:24	XS160	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	18	< LOD	9.66	9.66	< LOD	11.78	4.60	< LOD	47.23	47.23	< LOD	57.60	18.00	< LOD	11.07	11.07	< LOD	13.50	18.00	< LOD	23.37	23.37	< LOD	28.50	47.00
1071	21/06/2023 8:50	XS161	Goulburn Wheat Yards Assessment	Unnamed Road	In-situ - XRF	Gravelly silty sand	16.6	< LOD	7.81	7.81	< LOD	9.36		< LOD	27.67	27.67	< LOD	33.18		26.74	6.77	33.51	32.06	40.18		163.99	15.59	179.58	196.63	215.32	
1072	21/06/2023 8:52	XS162	Goulburn Wheat Yards Assessment	Unnamed Road	In-situ - XRF	Gravelly silt	16.6	< LOD	10.84	10.84	< LOD	13.00		< LOD	57.09	57.09	< LOD	68.45		< LOD	12.48	12.48	< LOD	14.96		183.22	26.47	209.69	219.69	251.43	
1073	21/06/2023 8:55	XS163	Goulburn Wheat Yards Assessment	Unnamed Road	In-situ - XRF	Gravelly silt	16.6	< LOD	7.81	7.81	< LOD	9.36		40.47	16.01	56.48	48.53	67.72		35.83	6.41	42.24	42.96	50.65		121.10	12.07	133.17	145.20	159.68	
1074	21/06/2023 8:58	XS164	Goulburn Wheat Yards Assessment	Unnamed Road	In-situ - XRF	Gravelly silt	16.6	< LOD	10.92	10.92	< LOD	13.09		75.54	50.06	125.60	74.71	150.60		< LOD	11.90	11.90	< LOD	14.27		< LOD	30.81	30.81	< LOD	36.94	
1075	21/06/2023 9:01	XS165	Goulburn Wheat Yards Assessment	Unnamed Road	In-situ - XRF	Gravelly silt	16.6	< LOD	29.94	29.94	< LOD	35.90		< LOD	118.92	118.92	< LOD	142.59		123.95	25.60	149.55	148.62	179.32		< LOD	53.80	53.80	< LOD	64.51	
1076	21/06/2023 9:04	XS166	Goulburn Wheat Yards Assessment	Unnamed Road	In-situ - XRF	Gravelly silty sand	16.6	14.38	6.77	21.15	17.24	25.36		< LOD	27.27	27.27	< LOD	32.70		52.72	8.04	60.76	63.21	72.85		78.03	12.15	90.18	93.56	108.13	
1077	21/06/2023 9:07	XS167	Goulburn Wheat Yards Assessment	Unnamed Road	In-situ - XRF	Gravelly silty sand	16.6	< LOD	18.16	18.16	< LOD	21.77		< LOD	112.95	112.95	< LOD	135.43		< LOD	21.16	21.16	< LOD	25.37		< LOD	49.09	49.09	< LOD	58.86	
1078	21/06/2023 9:10	XS168.	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	6.93	6.93	< LOD	8.31		< LOD	26.04	26.04	< LOD	31.22		13.69	5.60	19.29	16.41	23.13		68.13	11.16	79.29	81.69	95.07	
1079	21/06/2023 9:12	XS169	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	11.73	6.14	17.87	14.06	21.43		< LOD	36.12	36.12	< LOD	43.31		13.15	6.95	20.1	15.77	24.10		52.49	13.83	66.32	62.94	79.52	
1080	21/06/2023 9:16	XS170	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16	< LOD	9.07	9.07	< LOD	10.80	3.10	< LOD	56.07	56.07	< LOD	66.75	15.00	< LOD	10.22	10.22	< LOD	12.17	28.00	< LOD	27.42	27.42	< LOD	32.64	98.00
1083	21/06/2023 9:24	XS171	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	15.43	15.43	< LOD	18.50		< LOD	42.43	42.43	< LOD	50.88		90.66	12.47	103.13	108.71	123.66		154.97	20.40	175.37	185.82	210.28	
1084	21/06/2023 9:27	XS172	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	30.54	30.54	< LOD	36.62		< LOD	210.85	210.85	< LOD	252.82		< LOD	30.89	30.89	< LOD	37.04		< LOD	85.70	85.70	< LOD	102.76	
1085	21/06/2023 9:30	XS173	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	14.85	14.85	< LOD	17.81		< LOD	88.81	88.81	< LOD	106.49		< LOD	17.43	17.43	< LOD	20.90		72.14	32.09	104.23	86.50	124.98	
1086	21/06/2023 9:32	XS174	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	23.32	15.24	38.56	27.96	46.24		< LOD	137.53	137.53	< LOD	164.90		< LOD	23.74	23.74	< LOD	28.47		< LOD	69.85	69.85	< LOD	83.75	
1087	21/06/2023 9:35	XS175	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	22.7	22.7	< LOD	27.22		< LOD	142.85	142.85	< LOD	171.28		< LOD	25.95	25.95	< LOD	31.12		< LOD	65.17	65.17	< LOD	78.14	
1088	21/06/2023 9:38	XS176	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	70646	70646	< LOD	NC		< LOD	2366.28	2366.28	< LOD	2837.27		< LOD	623.19	623.19	< LOD	747.23		< LOD	3030.73	3030.73	< LOD	3633.97	
1089	21/06/2023 9:39	XS176	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	16.47	16.47	< LOD	19.75		< LOD	73.01	73.01	< LOD	87.54		44.60	13.89	58.49	53.48	70.13		111.88	29.44	141.32	134.15	169.45	
1090	21/06/2023 9:42	XS177	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	7.19	7.19	< LOD	8.62		23.57	14.98	38.55	28.26	46.22		25.86	5.77	31.63	31.01	37.93		287.34	16.41	303.75	344.53	364.21	
1091	21/06/2023 9:45	XS178	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	< LOD	20.22	20.22	< LOD	24.24		< LOD	155.49	155.49	< LOD	186.44		< LOD	23.75	23.75	< LOD	28.48		< LOD	66.11	66.11	< LOD	79.27	
1092	21/06/2023 9:48	XS179	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	14	< LOD	18.42	18.42	< LOD	21.42	4.90	< LOD	84.96	84.96	< LOD	98.79	28.00	37.34	14.89	52.23	43.42	60.73	81.00	149.71	35.89	185.6	174.08	215.81	190.00
1093	21/06/2023 9:51	XS180	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand	16.6	21.8	14.46	36.26	26.14	43.48		< LOD	146.26	146.26	< LOD	175.37		< LOD	21.87	21.87	< LOD	26.22		< LOD	71.32	71.32	< LOD	85.52	
1096	21/06/2023 10:46	XS181	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand dark brown	16.6	< LOD	19.1	19.1	< LOD	22.90		< LOD	121.23	121.23	< LOD	145.36		< LOD	24.41	24.41	< LOD	29.27		173.79	58.06	231.85	208.38	278.00	
1097	21/06/2023 10:48	XS182	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand dark brown	16.6	< LOD	26.7	26.7	< LOD	32.01		< LOD	191.31	191.31	< LOD	229.39		< LOD	32.08	32.08	< LOD	38.47		< LOD	77.93	77.93	< LOD	93.44	
1098	21/06/2023 10:51	XS183	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand dark brown	16.6	< LOD	9.55	9.55	< LOD	11.45		< LOD	39.60	39.60	< LOD	47.48		18.50	7.69	26.19	22.18	31.40		111.76	17.73	129.49	134.00	155.26	
1099	21/06/2023 10:53	XS184	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand dark brown	16.6	< LOD	9.42	9.42	< LOD	11.29		< LOD	57.36	57.36	< LOD	68.78		< LOD	11.36	11.36	< LOD	13.62		< LOD	27.23	27.23	< LOD	32.65	
1100	21/06/2023 10:56	XS185	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand dark brown	16.6	< LOD	8.86	8.86	< LOD	10.62		31.32	19.97	51.29	37.55	61.50		32.68	7.35	40.03	39.18	48.00		96.76	13.65	110.41	116.02	132.39	
1101	21/06/2023 10:58	XS186	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand dark brown	16.6	9.09	5.41	14.50	10.90	17.39		30.33	14.68	45.01	36.37	53.97		43.91	6.52	50.43	52.65	60.47		116.32	11.31	127.63	139.47	153.03	
1102	21/06/2023 11:01	XS187	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand dark brown	16.6	< LOD	9.45	9.45	< LOD	11.33		< LOD	39.42	39.42	< LOD	47.27		23.34	8.03	31.37	27.99	37.61		34.32	13.98	48.3	41.15	57.91	
1103	21/06/2023 11:03	XS188	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand light brown	16.6	< LOD	14.95	14.95	< LOD	17.93		< LOD	89.72	89.72	< LOD	107.58		< LOD	15.81	15.81	< LOD	18.96		< LOD	40.97	40.97	< LOD	49.12	
1104	21/06/2023 11:05	XS189	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly silty sand light brown	16.6	< LOD	11.34	11.34	< LOD	13.60		< LOD	50.72	50.72	< LOD	60.82		15.42	8.93	24.35	18.49	29.20		< LOD	26.06	26.06	< LOD	31.25	
1105	21/06/2023 11:10	XS190	Goulburn Wheat Yards Assessment	Finlay Road	In-situ - XRF		12	< LOD	9.39	9.39	< LOD	10.67	11.00	< LOD	37.67	37.67	< LOD	42.81	24.00	22.94	7.80	30.74	26.07	34.93	61.00	138.45	18.15	156.6	157.33	177.95	97.00
1108	21/06/2023 11:16	XS191	Goulburn Wheat Yards Assessment	Finlay Road	In-situ - XRF	Gravelly silty sand	16.6	< LOD	5.07	5.07	< LOD	6.08		22.16	11.24	33.40	26.57	40.05		10.05	4.03	14.08	12.05	16.88		76.53	8.14	84.67	91.76	101.52	
1109	21/06/2023 11:19	XS192	Goulburn Wheat Yards Assessment	Finlay Road	In-situ - XRF	Gravelly silty sand	16.6	< LOD	10.94	10.94	< LOD	13.12		< LOD	56.23	56.23	< LOD	67.42		< LOD	12.99	12.99	< LOD	15.58		< LOD	26.25	26.25	< LOD	31.47	
1110	21/06/2023 11:21	XS193	Goulburn Wheat Yards Assessment	Finlay Road	In-situ - XRF	Gravelly silty sand	16.6	< LOD	7.63	7.63	< LOD	9.15		< LOD	31.47	31.47	< LOD	37.73		< LOD	8.98	8.98	< LOD	10.77		106.85	14.64	121.49	128.12	145.67	
1111	21/06/2023 11:23	XS194	Goulburn Wheat Yards Assessment	Finlay Road	In-situ - XRF	Gravelly silty sand	16.6	< LOD	6.57	6.57	< LOD	7.88		36.04	22.81	58.85	43.21	70.56		< LOD	7.27	7.27	< LOD	8.72		52.97	13.02	65.99	63.51	79.12	
1112	21/06/2023 11:25	XS195	Goulburn Wheat Yards Assessment	Finlay Road	In-situ - XRF	Gravelly silty sand	16.6	< LOD	31.61	31.61	< LOD	37.90		< LOD	159.92	159.92	< LOD	191.75		70.67	25.77	96.44	84.74	115.64		< LOD	74.42	74.42	< LOD	89.23	
1113	21/06/2023 11:27	XS196	Goulburn Wheat Yards Assessment	Finlay Road	In-situ - XRF	Gravelly silty sand	16.6	< LOD	21.74	21.74	< LOD	26.07		< LOD	66.98	66.98	< LOD	80.31		110.00	17.73	127.73	131.89	153.15		62.80	24.98	87.78	75.30	105.25	
1114	21/06/2023 11:29	XS197	Goulburn Wheat Yards Assessment	Finlay Road	In-situ - XRF	Gravelly silty sand	16.6	< LOD	20.56	20.56	< LOD	24.65		< LOD	76.08	76.08	< LOD	91.22		83.13	17.36	100.49	99.68	120.49		< LOD	39.32	39.32	< LOD	47.15	
1115	21/06/2023 11:31	XS198	Goulburn Wheat Yards Assessment	Finlay Road	In-situ - XRF	Gravelly silty sand	16.6	< LOD	29	29	< LOD	34.77		< LOD	117.48	117.48	< LOD	140.86		98.66	23.64	122.3	118.30	146.64		< LOD	58.84	58.84	< LOD	70.55	
1116	21/06/2023 11:33	XS199	Goulburn Wheat Yards Assessment	Finlay Road	In-situ - XRF	Fine gravelly silt	16.6	< LOD	24.26	24.26	< LOD	29.09		< LOD	98.87	98.87	< LOD	118.55		70.87	19.34	90.21	84.98	108.17		< LOD	51.89	51.89	< LOD	62.22	
1117	21/06/2023 11:35	XS200	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silt, sample duplicate and triplicate taken D01 T01	19	< LOD	9.79	9.79	< LOD	12.09	12.00	< LOD	37.44	37.44	< LOD	46.22	27.00	26.00	7.93	33.93	32.10	41.89	54.00	76.78	15.22	92	94.79	113.58	99.00
1120	21/06/2023 11:41	XS201	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF		16.6	< LOD	17.98	17.98	< LOD	21.56		110.42	66.71	177.13	132.40	212.39		< LOD	20.03	20.03	< LOD	24.02		< LOD	50.04	50.04	< LOD	60.00	
1121	21/06/2023 11:52	XS202	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silty sand	16.6	< LOD	23.19	23.19	< LOD	27.81		< LOD	153.98	153.98	< LOD	184.63		< LOD	27.63	27.63	< LOD	33.13		< LOD	73.74	73.74	< LOD	88.42	
1122	21/06/2023 11:54	XS203	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silty sand	16.6	< LOD	13.1	13.1	< LOD	15.71		< LOD	57.84	57.84	< LOD	69.35		28.03	10.66	38.69	33.61	46.39		163.10	26.31	189.41	195.56	227.11	
1123	21/06/2023 11:56	XS204	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly sandy silt	16.6	< LOD	10.47	10.47	< LOD	12.55		< LOD	49.90	49.90	< LOD	59.83		< LOD	12.50	12.50	< LOD	14.99		107.09	20.90	127.99	128.41	153.47	
1124	21/06/2023 11:58	XS205	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly sandy silt	16.6	< LOD	17.51	17.51	< LOD	21.00		< LOD	89.20	89.20	< LOD	106.95		35.22	14.60	49.82	42.23	59.74		73.36	31.61	104.97	87.96	125.86	
1125	21/06/2023 12:00	XS206	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly sandy silt	16.6	< LOD	15.12	15.12	< LOD	18.13		< LOD	63.85	63.85	< LOD	76.56		32.79	11.68	44.47	39.32	53.32		119.78	26.23	146.01	143.62	175.07	
1126	21/06/2023 12:02	XS207	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF		16.6	6.96	3.54	10.50	8.35	12.59		35.18	9.52	44.70	42.18	53.60		26.73	4.27	31	32.05	37.17		234.85	10.76	245.61	281.59	294.50	
1127	21/06/2023 12:05	XS208	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly sandy silt	16.6	22.24	11.31	33.55	26.67	40.23		< LOD	98.95	98.95	< LOD	118.65		< LOD	16.94	16.94	< LOD	20.31		< LOD	46.10	46.10	< LOD	55.28	
1128	21/06/2023 12:07	XS209	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly sandy silt	16.6	< LOD	11.32	11.32	< LOD	13.57		< LOD	49.40	49.40	< LOD	59.23		13.87	8.61	22.48	16.63	26.95		41.57	18.00	59.57	49.84	71.43	
1129	21/06/2023 12:09	XS210	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly sandy silt	8.9	< LOD	7.13	7.13	< LOD	7.83	11.00	< LOD	27.87	27.87	< LOD	30.59	27.00	< LOD	8.37	8.37	< LOD	9.19	29.00	86.55	12.72	99.27	95.01	108.97	65.00
	21/06/2023 12:23	XS211	Goulburn Wheat Yards Assessment	Sloane Street	no sample collected	Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete																									
	21/06/2023 12:23	XS212	Goulburn Wheat Yards Assessment	Sloane Street	no sample collected	Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete																									
	21/06/2023 12:27	XS213	Goulburn Wheat Yards Assessment	Sloane Street	no sample collected	Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete																									
	21/06/2023 12:29	XS214	Goulburn Wheat Yards Assessment	Sloane Street	no sample collected	Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete																									
	21/06/2023 12:31	XS215	Goulburn Wheat Yards Assessment	Sloane Street	no sample collected	Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete																									
	21/06/2023 12:33	XS216	Goulburn Wheat Yards Assessment	Sloane Street	no sample collected	Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete																									
	21/06/2023 12:33	XS217	Goulburn Wheat Yards Assessment	Sloane Street	no sample collected	Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete																									
	21/06/2023 12:37	XS218	Goulburn Wheat Yards Assessment	Sloane Street	no sample collected	Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete																									
	21/06/2023 12:37	XS219	Goulburn Wheat Yards Assessment	Sloane Street	no sample collected	Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete																									
1132	21/06/2023 12:39	bitumen1	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF		16.6	< LOD	10.49	10.49	< LOD	12.58		< LOD	60.27	60.27	< LOD	72.27		< LOD	12.01	12.01	< LOD	14.40		49.39	21.97	71.36	48.56	85.56	
1133	21/06/2023 13:36	XS220	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt	16.6	< LOD	26.76	26.76	< LOD	32.09		< LOD	125.81	125.81	< LOD	150.85		< LOD	27.92	27.92	< LOD	33.48		< LOD	73.08	73.08	< LOD	87.63	
1134	21/06/2023 13:40	XS221	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt	16.6	43.87	22.11	65.98	52.60	79.11		< LOD	247.14	247.14	< LOD	296.33		< LOD	28.13	28.13	< LOD	33.73		< LOD	96.57	96.57	< LOD	115.79	
1135	21/06/2023 13:42	XS222	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt	16.6	< LOD	10.48	10.48	< LOD	12.57		< LOD	56.17	56.17	< LOD	67.35		< LOD	11.85	11.85	< LOD	14.21		< LOD	27.55	27.55	< LOD	33.03	
1136	21/06/2023 13:44	XS223	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt, sample taken duplicate and triplicate number D02 T02	14	< LOD	6.18	6.18	< LOD	7.19	6.90	25.06	15.75	40.81	29.14	47.45	17.00	9.38	4.96	14.34	10.91	16.67	22.00	70.13	10.29	80.42	69.27	93.51	47.00
1137	21/06/2023 13:46	XS224	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt	16.6	12.04	7.66	19.70	14.44	23.62		< LOD	59.11	59.11	< LOD	70.88		< LOD	12.54	12.54	< LOD	15.04		< LOD	27.91	27.91	< LOD	33.47	
1138	21/06/2023 13:48	XS225	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt	16.6	< LOD	8.87	8.87	< LOD	10.64		< LOD	45.29	45.29	< LOD	54.30		< LOD	9.94	9.94	< LOD	11.92		< LOD	22.31	22.31	< LOD	26.75	
1139	21/06/2023 13:50	XS226	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt	16.6	< LOD	14.04	14.04	< LOD	16.83		< LOD	80.42	80.42	< LOD	96.43		< LOD	16.99	16.99	< LOD	20.37		< LOD	36.01	36.01	< LOD	43.18	
1140	21/06/2023 13:54	XS227	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF		16.6	< LOD	8.81	8.81	< LOD	10.56		< LOD	44.83	44.83	< LOD	53.75		< LOD	10.64	10.64	< LOD	12.76		< LOD	23.21	23.21	< LOD	27.83	
1141	21/06/2023 13:59	XS228	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt	16.6	< LOD	6.73	6.73	< LOD	8.07		< LOD	29.02	29.02	< LOD	34.80		< LOD	7.93	7.93	< LOD	9.51		85.02	13.14	98.16	84.19	117.70	
1142	21/06/2023 14:03	XS229	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt medium gravel	16.6	10.01	5.44	15.45	12.00	18.53		55.85	23.02	78.87	66.97	94.57		< LOD	9.23	9.23	< LOD	11.07		67.67	13.52	81.19	66.84	97.35	
1143	21/06/2023 14:05	XS230	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy fill	16.6	< LOD	6.75	6.75	< LOD	8.09		41.11	20.43	61.54	49.29	73.79		< LOD	8.64	8.64	< LOD	10.36		22.37	10.20	32.57	21.54	39.05	
1146	21/06/2023 14:12	XS231	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly silt black	16.6	< LOD	14.85	14.85	< LOD	17.81		< LOD	124.95	124.95	< LOD	149.82		< LOD	16.83	16.83	< LOD	20.18		< LOD	52.68	52.68	< LOD	63.17	
1147	21/06/2023 14:15	XS232	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Fine gravelly sandy silt black	16.6	< LOD	9.12	9.12	< LOD	10.94		56.61	32.45	89.06	67.88	106.79		< LOD	10.90	10.90	< LOD	13.07		47.35	17.21	64.56	46.52	77.41	
1148	21/06/2023 14:17	XS233	Goulburn Wheat Yards Assessment	Sloane Street	In-situ - XRF	Gravelly sandy silt medium sized gravel	16.6	17.65	9.65	27.30	21.16	32.73		< LOD	86.69	86.69	< LOD	103.94		< LOD	14.77	14.77	< LOD	17.71		< LOD	36.97	36.97	< LOD	44.33	

Statistical Summary	Arsenic Error	Arsenic		Copper		Lead		Zinc	
Number of Results	2.46	230	230	230	230	230	230	230	230
Number of Detects		28	229	50	229	103	229	150	229
Number of non-Detects		202	1	180	1	127	1	80	1
Minimum Concentration		< LOD	2.95	< LOD	12.18	< LOD	3.6	< LOD	21.4
Minimum Detect		4.7	2.9	18.4	12.2	9.9	3.6	21.5	21.4
Maximum Concentration		52.6	618.6	405.0	2837.3	148.6	747.2	959.0	3634.0
Maximum Detect		52.6	618.6	405.0	2837.3	148.6	747.2	959.0	3634.0
Mean Concentration		15.9	17.3	57.0	87.5	41.9	35.7	133.3	134.5
Standard Deviation		10.5	40.8	55.8	190.4	31.2	56.1	117.9	257.1
Number of Results above EIL		0	1	5	52	0	0	100	134
Number of Results above HIL		0	1	0	0	0	1	0	0
Number of Results >2.5 times above EIL		0	1	1	11	0	0	34	47

Blank Cell indicates no criterion available
LOR = Limit of Reporting
National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).
Nickel, Zinc and Copper EIL, based on CEC of 5cmol/kg
NC = not calculated due to error being identified as an outlier
Concentration in red font and grey box exceed the adopted HIL 'C' Recreational Use
Concentration in green font and grey box exceed the adopted EIL for Urban Residential/ Public Open Space
Concentrations in box exceed the screening value >2.5 times
Where one or more guideline value is exceeded, the highest guidline value will be highlighted
Concentrations below the LOR noted as <value

Client: ARTC
Job No: 318001660
Project Name: Goulburn Wheat Yards Assessment Offsite Lead Delineation
7/09/2023

TABLE 3:
Soil Laboratory QA/QC Table

	ALS Sample number:			N23-Jn0060223	N23-Jn0060226	RPD	ES2321678-001	RPD	N23-Jn0060225	N23-Jn0060227	RPD	ES2321678-002	RPD
	Sample date:			June 21, 2023	June 21, 2023		June 21, 2023		June 21, 2023	June 21, 2023		June 21, 2023	
	Sample ID:			XS200	D001		T01		XS223	D002		T02	
	Project Name:			Goulburn Wheat Yards Assessment	Goulburn Wheat Yards Assessment		Goulburn Wheat Yards Assessment		Goulburn Wheat Yards Assessment	Goulburn Wheat Yards Assessment		Goulburn Wheat Yards Assessment	
	Road:			Sloane Street	Sloane Street		Sloane Street		Sloane Street	Sloane Street		Sloane Street	
	Sampling Method:			Hand Auger	Hand Auger		Hand Auger		Hand Auger	Hand Auger		Hand Auger	
Guidelines	**Sample Description:**			Primary Lab XS200	Duplicate of XS200		Triplicate of XS200		Primary Lab XS223	Duplicate of XS223		Triplicate of XS223	
Analyte grouping / Analyte		**Units**	**LOR**										
Moisture Content				19	16	*17.1*	17	*11.1*	14	15	*6.9*	16.4	*15.8*
Arsenic		mg/kg	1	12	6.9	*54.0*	9	*28.6*	6.9	5.6	*20.8*	7	*1.4*
Copper		mg/kg	1	27	24	*11.8*	30	*10.5*	17	39	*78.6*	18	*5.7*
Lead		mg/kg	1	54	56	*3.6*	58	*7.1*	22	16	*31.6*	24	*8.7*
Zinc		mg/kg	1	99	97	*2.0*	113	*13.2*	47	40	*16.1*	44	*6.6*

LOR = Limit of Reporting
<value = Less than the laboratory Limit of Reporting (LOR)
Shaded cells exceed RPD >30%
nc = not calculated as one or more results are below the LOR

	ALS Sample number:			N23-Jn0060228	N23-Jn0060229
	Sample date:			June 20, 2023	June 21, 2023
	Sample ID:			RINSATE_20/6/23	RINSATE_21/6/23
	Project Name:			Goulburn Wheat Yards Assessment	Goulburn Wheat Yards Assessment
	Road:			Sloane Street	Sloane Street
	Sampling Method:			Rinsate off Hand Auger	Rinsate off Hand Auger
Guidelines	**Sample Description:**				
Analyte grouping / Analyte		**Units**	**LOR**		
Arsenic		mg/L	1	< 0.001	< 0.001
Copper		mg/L	1	**0.002**	< 0.001
Lead		mg/L	1	**0.005**	**0.002**
Zinc		mg/L	1	**0.023**	**0.009**

Results in **bold** exceed the LOR

TABLE 4:
XRF QA/QC

RAMBOLL Bright ideas. Sustainable change.

Reading No:	Instrument blank - silicon dioxide	881	895	907	919	931	943	955	968	982	994	1006	1018	1030	1042	1057	1069	1081	1094	1106	1118	1130	1144
Sample date:		19/06/2023 15:37	19/06/2023 16:41	20/06/2023 7:50	20/06/2023 8:26	20/06/2023 9:04	20/06/2023 9:45	20/06/2023 10:18	20/06/2023 11:49	20/06/2023 12:34	20/06/2023 13:42	20/06/2023 14:48	20/06/2023 15:26	20/06/2023 15:56	20/06/2023 16:30	21/06/2023 7:46	21/06/2023 8:27	21/06/2023 9:19	21/06/2023 9:54	21/06/2023 11:12	21/06/2023 11:37	21/06/2023 12:11	21/06/2023 14:07
Sample ID:		sio2_01	SIO2_02	SIO2_03	SIO2_04	SIO2_05	SIO2_06	SIO2_07	SIO2_08	SIO2_09	SIO2_10	SIO2_11	SIO2_12	SIO2_13	SIO2_14	SIO2_15	SIO2_16	SIO2_17	SIO2_18	SIO2_19	SIO2_20	SIO2_21	SIO2_22
Project Name:		Goulburn Wheat Yards Assessment	Goulburn Wheat Yards Assessment	Goulburn Wheat Yards Assessment	Goulburn Wheat Yards Assessment	Goulburn Wheat Yards Assessment	Goulburn Wheat Yards Assessment	Goulburn Wheat Yards Assessment	Goulburn Wheat Yards Assessment	Goulburn Wheat Yards Assessment	Goulburn Wheat Yards Assessment	Goulburn Wheat Yards Assessment	Goulburn Wheat Yards Assessment	Goulburn Wheat Yards Assessment	Goulburn Wheat Yards Assessment	Goulburn Wheat Yards Assessment	Goulburn Wheat Yards Assessment	Goulburn Wheat Yards Assessment	Goulburn Wheat Yards Assessment	Goulburn Wheat Yards Assessment	Goulburn Wheat Yards Assessment	Goulburn Wheat Yards Assessment	Goulburn Wheat Yards Assessment
Road:		Sloane Street	Sloane Street	Sloane Street	Sloane Street	Sloane Street	Ottiwell Street (west	Ottiwell Street (west	Ottiwell Street (east)	King Street	Cooma Avenue	Lansdowne Street	Sloane Street	Sloane Street	Sloane Street	Sloane Street	Sloane Street	Sloane Street	Sloane Street	Finlay Road	Sloane Street	Sloane Street	Sloane Street
Sampling Method:		In-situ - XRF	In-situ - XRF	In-situ - XRF	In-situ - XRF	In-situ - XRF	In-situ - XRF	In-situ - XRF	In-situ - XRF	In-situ - XRF	In-situ - XRF	In-situ - XRF	In-situ - XRF	In-situ - XRF	In-situ - XRF	In-situ - XRF	In-situ - XRF	In-situ - XRF	In-situ - XRF	In-situ - XRF	In-situ - XRF	In-situ - XRF	In-situ - XRF
Arsenic (ppm)	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Copper (ppm)	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Lead (ppm)	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD	< LOD
Zinc (ppm)	< LOD	< LOD	6.65	9.67	8	6.26	7.88	< LOD	9.76	< LOD	< LOD	9.62	6.73	8.98	< LOD	14.14	8.27	7.89	< LOD	7.5	7.73	6.94	< LOD

Reading No:	Calibration verification checks -	882	RPD	896	RPD	908	RPD	920	RPD	932	RPD	944	RPD	956	RPD	969	RPD	983	RPD	995	RPD	1007	RPD
Sample date:		19/06/2023 15:39		19/06/2023 16:42		20/06/2023 7:52		20/06/2023 8:28		20/06/2023 9:06		20/06/2023 9:46		20/06/2023 10:20		20/06/2023 11:50		20/06/2023 12:35		20/06/2023 13:43		20/06/2023 14:49	
Sample ID:		RCRA_01		RCRA_02		RCRA_03		RCRA_04		RCRA_05		RCRA_06		RCRA_07		RCRA_08		RCRA_09		RCRA_10		RCRA_11	
Project Name:		Goulburn Wheat Yards Assessment		Goulburn Wheat Yards Assessment		Goulburn Wheat Yards Assessment		Goulburn Wheat Yards Assessment		Goulburn Wheat Yards Assessment		Goulburn Wheat Yards Assessment		Goulburn Wheat Yards Assessment		Goulburn Wheat Yards Assessment		Goulburn Wheat Yards Assessment		Goulburn Wheat Yards Assessment		Goulburn Wheat Yards Assessment	
Road:		Sloane Street		Sloane Street		Sloane Street		Sloane Street		Sloane Street		Ottiwell Street (west)		Ottiwell Street (west)		Ottiwell Street (east)		King Street		Cooma Avenue		Lansdowne Street	
Sampling Method:		In-situ - XRF		In-situ - XRF		In-situ - XRF		In-situ - XRF		In-situ - XRF		In-situ - XRF		In-situ - XRF		In-situ - XRF		In-situ - XRF		In-situ - XRF		In-situ - XRF	
Sample Description																							
Arsenic (ppm)	500	476.23	*4.9*	259.2	*63.4*	389.06	*25.0*	414.08	*18.8*	439.52	*12.9*	470.83	*6.0*	451.18	*10.3*	471.92	*5.8*	453.1	*9.8*	444.15	*11.8*	455.11	*9.4*
Copper (ppm)	20	20.77	*3.8*	< LOD	*nc*	21.01	*4.9*	23	*14.0*	16.81	*17.3*	22.4	*11.3*	18.63	*7.1*	17.98	*10.6*	17.39	*14.0*	< LOD	*nc*	16.14	*21.4*
Lead (ppm)	500	456.42	*9.1*	252.9	*65.6*	372.28	*29.3*	417.79	*17.9*	452.68	*9.9*	462.17	*7.9*	469.82	*6.2*	463.83	*7.5*	470.58	*6.1*	475.55	*5.0*	463.46	*7.6*
Zinc (ppm)	50	51.7	*3.3*	60.04	*18.2*	46.84	*6.5*	46.46	*7.3*	52.16	*4.2*	48.91	*2.2*	47.83	*4.4*	50.51	*1.0*	47.84	*4.4*	48.92	*2.2*	41.27	*19.1*

Reading No:	Calibration verification checks -	1019	RPD	1031	RPD	1043	RPD	1058	RPD	1070	RPD	1082	RPD	1095	RPD	1107	RPD	1119	RPD	1131	RPD	1145	RPD
Sample date:		20/06/2023 15:27		20/06/2023 15:57		20/06/2023 16:31		21/06/2023 7:47		21/06/2023 8:28		21/06/2023 9:20		21/06/2023 9:56		21/06/2023 11:13		21/06/2023 11:38		21/06/2023 12:12		21/06/2023 14:09	
Sample ID:		RCRA_12		RCRA_13		RCRA_14		RCRA_15		RCRA_16		RCRA_17		RCRA_18		RCRA_19		RCRA_20		RCRA_21		RCRA_22	
Project Name:		Goulburn Wheat Yards Assessment		Goulburn Wheat Yards Assessment		Goulburn Wheat Yards Assessment		Goulburn Wheat Yards Assessment		Goulburn Wheat Yards Assessment		Goulburn Wheat Yards Assessment		Goulburn Wheat Yards Assessment		Goulburn Wheat Yards Assessment		Goulburn Wheat Yards Assessment		Goulburn Wheat Yards Assessment		Goulburn Wheat Yards Assessment	
Road:		Sloane Street		Sloane Street		Sloane Street		Sloane Street		Sloane Street		Sloane Street		Sloane Street		Finlay Road		Sloane Street		Sloane Street		Sloane Street	
Sampling Method:		In-situ - XRF		In-situ - XRF		In-situ - XRF		In-situ - XRF		In-situ - XRF		In-situ - XRF		In-situ - XRF		In-situ - XRF		In-situ - XRF		In-situ - XRF		In-situ - XRF	
Sample Description																							
Arsenic (ppm)	500	454.58	*9.5*	464.22	*7.4*	458.59	*8.6*	461.91	*7.9*	415.55	*18.4*	473.38	*5.5*	456.15	*9.2*	461.98	*7.9*	465.41	*7.2*	446.6	*11.3*	454.79	*9.5*
Copper (ppm)	20	24.61	*20.7*	19.93	*0.4*	17.78	*11.8*	23.67	*16.8*	21.5	*7.2*	< LOD	*nc*	16.68	*18.1*	< LOD	*nc*	17.9	*11.1*	27.4	*31.2*	21.77	*8.5*
Lead (ppm)	500	460.15	*8.3*	467.73	*6.7*	456.41	*9.1*	465.62	*7.1*	405.94	*20.8*	440.59	*12.6*	465.51	*7.1*	459.84	*8.4*	458.26	*8.7*	467.06	*6.8*	460.63	*8.2*
Zinc (ppm)	50	49.07	*1.9*	47.87	*4.4*	48.88	*2.3*	47.21	*5.7*	48.29	*3.5*	46.93	*6.3*	49.13	*1.8*	46.25	*7.8*	51.9	*3.7*	49.74	*0.5*	48.57	*2.9*

Appendix 6
Field Sheets

SOIL SAMPLING (XS190)

Project no.	318,001,660	**Sample ID**	XS190
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:06	**End time**	11:07
Date	21/06/2023	**Operator**	Other

Sample appearance

Pb 23, Cu 0 , Zn 138 , As 0

Comments

Gravely silty sand light brown, sample taken

Location

Photos

SOIL SAMPLING (XS227)

Project no.	318,001,660	**Sample ID**	XS227
Project name	Goulburn Wheatyards Offsite Lead Delineation	**Sample type**	XRF
Start time	13:52	**End time**	
Date	21/06/2023	**Operator**	Steve Cadman

Sample appearance
ND all metals

Comments
Brown silty soil

Location

Photos

SOIL SAMPLING (XS201)

Project no.	318,001,660	**Sample ID**	XS201
Project name	Goulburn Wheatyards Offsite Lead Delineation	**Sample type**	XRF
Start time	11:39	**End time**	
Date	21/06/2023	**Operator**	Steve Cadman

Sample appearance
Cu 110

Comments
Brown silty sand

Location

Photos

SOIL SAMPLING (XS233)

Project no.	318,001,660	**Sample ID**	XS233
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	14:13	**End time**	14:14
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0 , As 18, Zn 0,

Comments
Gravely sandy silt medium sized gravel

Location

Photos

SOIL SAMPLING (XS232)

Project no.	318,001,660	**Sample ID**	XS232
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	14:11	**End time**	14:12
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 57 , As 0, Zn 47,

Comments
Fine gravely sandy silt black

Location

Photos

SOIL SAMPLING (XS231)

Project no.	318,001,660	**Sample ID**	XS231
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	14:08	**End time**	14:09
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0 , As 0, Zn 0,

Comments
Fine gravely silt black

Location

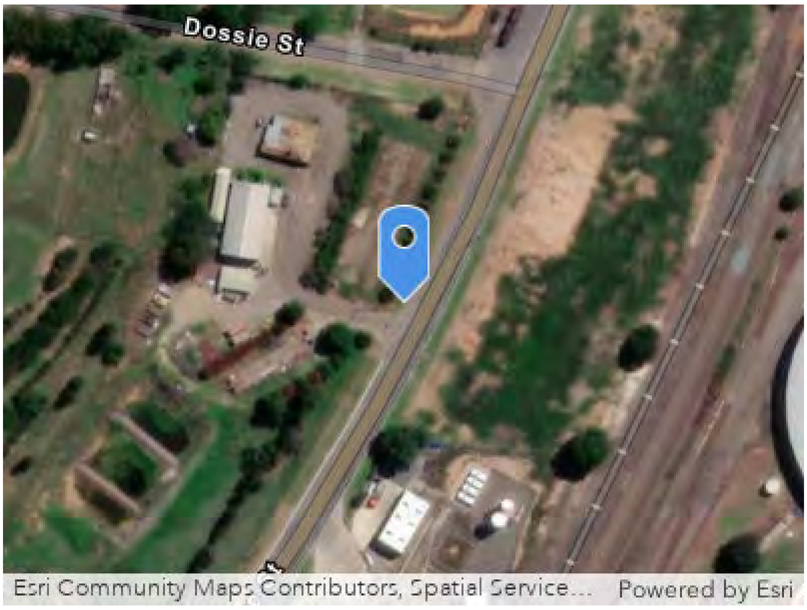
Photos

SOIL SAMPLING (XS230)

Project no.	318,001,660	**Sample ID**	XS230
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	14:01	**End time**	14:02
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 41 , As 0, Zn 22,			
Comments Gravely sandy fill			

Location



Photos

SOIL SAMPLING (XS229)

Project no.	318,001,660	**Sample ID**	XS229
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	13:58	**End time**	13:59
Date	21/06/2023	**Operator**	Other

Sample appearance

Pb 0, Cu 56 , As 10, Zn 68,

Comments

Gravely sandy silt medium gravel

Location

Photos

SOIL SAMPLING (XS228)

Project no.	318,001,660	**Sample ID**	XS228
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	13:57	**End time**	13:58
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0 , As 0, Zn 85,

Comments
Gravely sandy silt

Location

Photos

SOIL SAMPLING (XS226)

Project no.	318,001,660	**Sample ID**	XS226
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	13:47	**End time**	13:48
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0 , As 0, Zn 0,

Comments
Gravely sandy silt

Location

Photos

	 WARNING
	

SOIL SAMPLING (XS225)

Project no.	318,001,660	**Sample ID**	XS225
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	13:44	**End time**	12:46
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0 , As 0, Zn 0,

Comments
Gravely sandy silt

Location

Photos

SOIL SAMPLING (XS224)

Project no.	318,001,660	**Sample ID**	XS224
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	13:42	**End time**	12:43
Date	21/06/2023	**Operator**	Other

Sample appearance Pb 0, Cu 0 , As 12, Zn 0,
Comments Gravely sandy silt

Location

Photos

SOIL SAMPLING (XS223)

Project no.	318,001,660	**Sample ID**	XS223
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	13:40	**End time**	12:41
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 9, Cu 25 , As 0, Zn 70,

Comments
Gravely sandy silt, sample taken duplicate and triplicate number D02 T02

Location

Photos

RAMBOLL
318001660
Surface
21/6/23
SC EJ
RAMBOLL
318001660
TD2
Surface
21/6/23
SC EJ
RAMBOLL
318001660
DD2
Surface
21/6/23
SC EJ

SOIL SAMPLING (XS222)

Project no.	318,001,660	**Sample ID**	XS222
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	13:38	**End time**	12:39
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0 , As 0, Zn 0,

Comments
Gravely sandy silt

Location

Photos

SOIL SAMPLING (XS221)

Project no.	318,001,660	**Sample ID**	XS221
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	13:36	**End time**	12:37
Date	21/06/2023	**Operator**	Other

Sample appearance

Pb 0, Cu 0 , As 44, Zn 0,

Comments

Gravely sandy silt

Location

Photos

SOIL SAMPLING (XS220)

Project no.	318,001,660	**Sample ID**	XS220
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	13:33	**End time**	12:34
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0 , As 0, Zn 0,			
Comments Gravely sandy silt			

Location

Photos

SOIL SAMPLING (XS219)

Project no.	318,001,660	**Sample ID**	XS219
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	12:36	**End time**	12:37
Date	21/06/2023	**Operator**	Other

Sample appearance
No sample could be taken

Comments
Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete

Location

Photos

SOIL SAMPLING (XS218)

Project no.	318,001,660	**Sample ID**	XS218
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	12:35	**End time**	12:36
Date	21/06/2023	**Operator**	Other

Sample appearance
No sample could be taken

Comments
Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete

Location

Photos

SOIL SAMPLING (XS217)

Project no.	318,001,660	**Sample ID**	XS217
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	12:33	**End time**	12:33
Date	21/06/2023	**Operator**	Other

Sample appearance
No sample could be taken

Comments
Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete

Location

Photos

SOIL SAMPLING (XS216)

Project no.	318,001,660	**Sample ID**	XS216
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	12:33	**End time**	12:33
Date	21/06/2023	**Operator**	Other

Sample appearance
No sample could be taken

Comments
Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete

Location

Photos

SOIL SAMPLING (XS144)

Project no.	318,001,660	**Sample ID**	XS144
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	Hand auger
Start time	16:41	**End time**	16:42
Date	20/06/2023	**Operator**	Other
Sample appearance gravely silty sand			
Comments Pb 13, Cu 0, Zn 107, As 0			

Location

Photos

SOIL SAMPLING (XS143)

Project no.	318,001,660	**Sample ID**	XS143
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	Hand auger
Start time	16:38	**End time**	16:39
Date	20/06/2023	**Operator**	Other

Sample appearance

gravely silty sand

Comments

Pb 22, Cu 338, Zn 0, As 0

Location

Photos

SOIL SAMPLING (XS142)

Project no.	318,001,660	**Sample ID**	XS142
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	Hand auger
Start time	16:36	**End time**	16:37
Date	20/06/2023	**Operator**	Other

Sample appearance

gravely silty sand

Comments

Pb 0, Cu 0, Zn 0, As 0

Location

Photos

SOIL SAMPLING (XS141)

Project no.	318,001,660	**Sample ID**	XS141
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	Hand auger
Start time	16:34	**End time**	16:35
Date	20/06/2023	**Operator**	Other
Sample appearance gravely silty sand			
Comments Pb 0, Cu 0, Zn 0, As 0			

Location

Photos

SOIL SAMPLING (XS140)

Project no.	318,001,660	**Sample ID**	XS140
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	Hand auger
Start time	16:20	**End time**	16:22
Date	20/06/2023	**Operator**	Other

Sample appearance

gravely silty sand medium sized light brown sample taken

Comments

Pb 18, Cu 7, Zn 132, As 0

Location

Photos


For locations and contacts
throughout Australia
ENVIROLAB
RAMBOLL
Project: 318001660
Sample ID: XS140
Depth: Surface
Date: 20/6/23
Sampled by: SC EJ
bottle does not contain any preservative
container to the top with sample and chill

SOIL SAMPLING (XS139)

Project no.	318,001,660	**Sample ID**	XS139
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	Hand auger
Start time	16:18	**End time**	16:19
Date	20/06/2023	**Operator**	Other

Sample appearance

gravely silty sand medium sized light brown

Comments

Pb 0, Cu 0, Zn 0, As 0

Location

Photos

SOIL SAMPLING (XS138)

Project no.	318,001,660	**Sample ID**	XS138
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	Hand auger
Start time	16:15	**End time**	16:16
Date	20/06/2023	**Operator**	Other

Sample appearance

gravely silty sand medium sized gravel

Comments

Pb 0, Cu 0, Zn 0, As 0

Location

Photos

SOIL SAMPLING (XS137)

Project no.	318,001,660	**Sample ID**	XS137
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	Hand auger
Start time	16:13	**End time**	16:14
Date	20/06/2023	**Operator**	Other

Sample appearance

gravely silty sand medium sized gravel

Comments

Pb 28, Cu 0, Zn 53, As 0

Location

Photos

SOIL SAMPLING (XS136)

Project no.	318,001,660	**Sample ID**	XS136
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	Hand auger
Start time	16:11	**End time**	16:12
Date	20/06/2023	**Operator**	Other

Sample appearance

gravely silty sand medium sized gravel

Comments

Pb 0, Cu 0, Zn 30, As 0

Location

Photos

SOIL SAMPLING (XS135)

Project no.	318,001,660	**Sample ID**	XS135
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	Hand auger
Start time	16:09	**End time**	16:10
Date	20/06/2023	**Operator**	Other
Sample appearance gravely silty sand			
Comments Pb 13, Cu 0, Zn 73, As 0			

Location

Photos

SOIL SAMPLING (XS134)

Project no.	318,001,660	**Sample ID**	XS134
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	Hand auger
Start time	16:07	**End time**	16:08
Date	20/06/2023	**Operator**	Other

Sample appearance

gravely silty sand medium gravel

Comments

Pb 0, Cu 0, Zn 0, As 0

Location

Photos

SOIL SAMPLING (XS133)

Project no.	318,001,660	**Sample ID**	XS133
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	16:04	**End time**	16:05
Date	20/06/2023	**Operator**	Other

Sample appearance

gravely silty sand

Comments

Pb 26, Cu 0, Zn 50, As 0

Location

Photos

SOIL SAMPLING (XS132)

Project no.	318,001,660	**Sample ID**	XS132
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	16:02	**End time**	16:03
Date	20/06/2023	**Operator**	Other

Sample appearance
gravely silty sand

Comments
Pb 0, Cu 0, Zn 0, As 0

Location

Photos

SOIL SAMPLING (XS131)

Project no.	318,001,660	**Sample ID**	XS131
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	16:00	**End time**	16:01
Date	20/06/2023	**Operator**	Other

Sample appearance
Fine gravely silty sand

Comments
Pb 16, Cu 0, Zn 25, As 0

Location

Photos

RAMBOLL

SOIL SAMPLING (XS130)

Project no.	318,001,660	**Sample ID**	XS130
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	15:49	**End time**	15:50
Date	20/06/2023	**Operator**	Other
Sample appearance Fine gravely silty sand sample taken			
Comments Pb 20, Cu 23, Zn 233, As 0			

Location

Photos

For locations and contacts
throughout Australia please
visit www.envirolab.com.au
ENVIROLAB
RAMBOLL
Project: 318001660
Sample ID: XS130
Depth: Surface
Date: 20/6/23
Sampled by: SC EJ
This bottle does not contain any preservative
Fill container to the top with sample and chill.

SOIL SAMPLING (XS129)

Project no.	318,001,660	**Sample ID**	XS129
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	15:46	**End time**	15:47
Date	20/06/2023	**Operator**	Other

Sample appearance
Fine gravely silty sand

Comments
Pb 0, Cu 0, Zn 32, As 0

Location

Photos

SOIL SAMPLING (XS128)

Project no.	318,001,660	**Sample ID**	XS128
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	15:44	**End time**	15:45
Date	20/06/2023	**Operator**	Other
Sample appearance Fine gravely silty sand			
Comments Pb 13, Cu 0, Zn 133, As 5			

Location

Photos

SOIL SAMPLING (XS127)

Project no.	318,001,660	**Sample ID**	XS127
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	15:42	**End time**	15:43
Date	20/06/2023	**Operator**	Other

Sample appearance
Fine gravely silty sand

Comments
Pb 0, Cu 0, Zn 42, As 0

Location

Photos

SOIL SAMPLING (XS126)

Project no.	318,001,660	**Sample ID**	XS126
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	15:40	**End time**	15:41
Date	20/06/2023	**Operator**	Other

Sample appearance Gravely silty sand
Comments Pb 0, Cu 0, Zn 33, As 0

Location

Photos

SOIL SAMPLING (XS125)

Project no.	318,001,660	**Sample ID**	XS125
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	15:38	**End time**	15:39
Date	20/06/2023	**Operator**	Other

Sample appearance
Gravely silty sand

Comments
Pb 0, Cu 0, Zn 68, As 0

Location

Photos

SOIL SAMPLING (XS124)

Project no.	318,001,660	**Sample ID**	XS124
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	15:37	**End time**	15:38
Date	20/06/2023	**Operator**	Other

Sample appearance

Gravely silty sand

Comments

Pb 0, Cu 0, Zn 44, As 0

Location

Photos

SOIL SAMPLING (XS123)

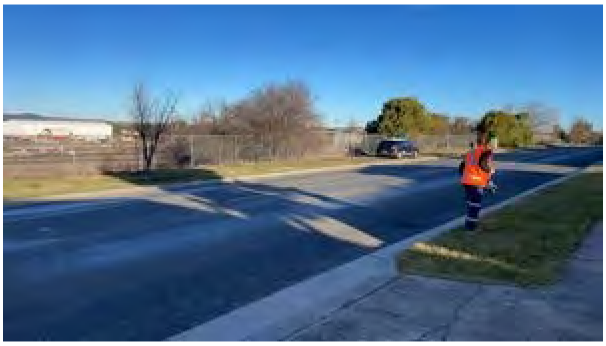
Project no.	318,001,660	**Sample ID**	XS123
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	15:34	**End time**	15:35
Date	20/06/2023	**Operator**	Other

Sample appearance
Gravely silty sand

Comments
Pb 11, Cu 24, Zn 107, As 0

Location

Photos

SOIL SAMPLING (XS122)

Project no.	318,001,660	**Sample ID**	XS122
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	15:32	**End time**	15:33
Date	20/06/2023	**Operator**	Other

Sample appearance
Gravely silty sand

Comments
Pb 12, Cu 0, Zn 199, As 0

Location

Photos

SOIL SAMPLING (XS121)

Project no.	318,001,660	**Sample ID**	XS121
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	15:30	**End time**	15:31
Date	20/06/2023	**Operator**	Other
Sample appearance Gravely silty sand			
Comments Pb 0, Cu 17, Zn 158, As 4			

Location

Photos

SOIL SAMPLING (XS120)

Project no.	318,001,660	**Sample ID**	XS120
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	15:19	**End time**	15:20
Date	20/06/2023	**Operator**	Other

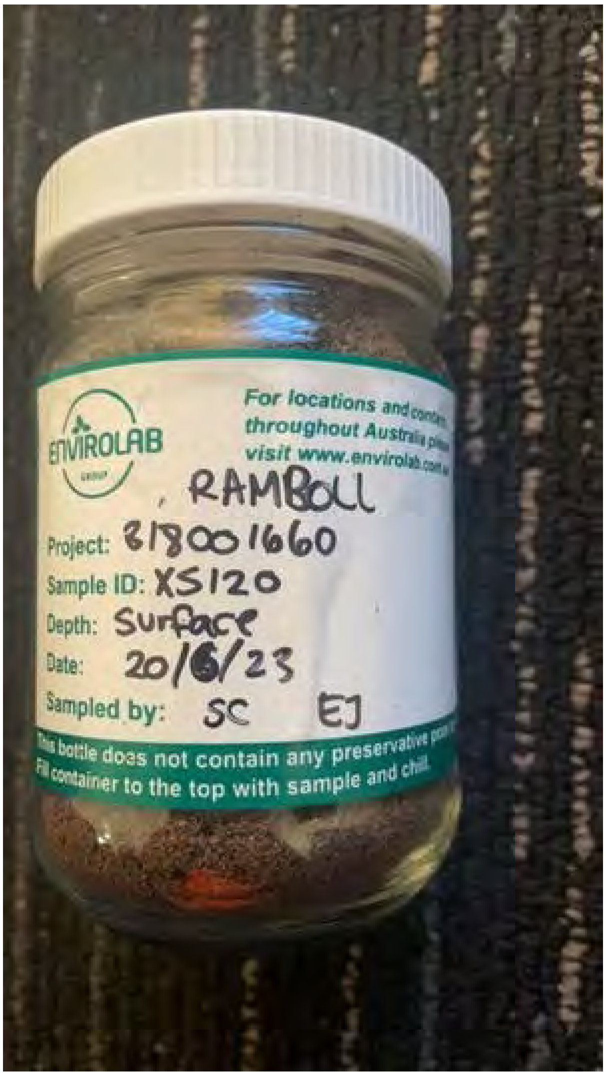
Sample appearance
Gravely silty sand sample taken

Comments
Pb 27, Cu 0, Zn 107, As 0

Location

Photos


ENVIROLAB
For locations and
throughout Australia
visit www.envirolab
RAMBOLL
Project: 318001660
Sample ID: XS120
Depth: Surface
Date: 20/6/23
Sampled by: SC EJ
This bottle does not contain any preservative
Fill container to the top with sample and chill.

SOIL SAMPLING (XS119)

Project no.	318,001,660	**Sample ID**	XS119
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	15:17	**End time**	15:18
Date	20/06/2023	**Operator**	Other
Sample appearance Gravely silty sand			
Comments Pb 11, Cu 0, Zn 161, As 0			

Location

Photos

SOIL SAMPLING (XS118)

Project no.	318,001,660	**Sample ID**	XS118
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	15:08	**End time**	15:09
Date	20/06/2023	**Operator**	Other

Sample appearance
Gravely silt

Comments
Pb 0, Cu 0, Zn 0, As 0

Location

Photos

RAMBOLL

SOIL SAMPLING (XS117)

Project no.	318,001,660	**Sample ID**	XS117
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	15:05	**End time**	15:06
Date	20/06/2023	**Operator**	Other
Sample appearance Gravely silt			
Comments Pb 16, Cu 0, Zn 32, As 0			

Location

Photos

SOIL SAMPLING (XS116)

Project no.	318,001,660	**Sample ID**	XS116
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	15:02	**End time**	15:03
Date	20/06/2023	**Operator**	Other
Sample appearance Gravely silt			
Comments Pb 0, Cu 0, Zn 60, As 0			

Location

Photos

SOIL SAMPLING (XS115)

Project no.	318,001,660	**Sample ID**	XS115
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	15:00	**End time**	15:01
Date	20/06/2023	**Operator**	Other

Sample appearance
Gravely silt

Comments
Pb 13, Cu 0, Zn 52, As 0

Location

Photos

SOIL SAMPLING (XS114)

Project no.	318,001,660	**Sample ID**	XS114
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	14:58	**End time**	14:59
Date	20/06/2023	**Operator**	Other

Sample appearance
Gravely silt

Comments
Pb 40, Cu 0, Zn 87, As 0

Location

Photos

SOIL SAMPLING (XS113)

Project no.	318,001,660	**Sample ID**	XS113
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	14:56	**End time**	14:57
Date	20/06/2023	**Operator**	Other
Sample appearance Gravely silt			
Comments Pb 21, Cu 0, Zn 49, As 0			

Location

Photos

SOIL SAMPLING (XS112)

Project no.	318,001,660	**Sample ID**	XS112
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	14:54	**End time**	14:55
Date	20/06/2023	**Operator**	Other
Sample appearance Gravely silt			
Comments Pb 43, Cu 0, Zn 86, As 0			

Location

Photos

SOIL SAMPLING (XS111)

Project no.	318,001,660	**Sample ID**	XS111
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	14:50	**End time**	14:51
Date	20/06/2023	**Operator**	Other
Sample appearance Gravely silt			
Comments Pb 20, Cu 15, Zn 295, As 6			

Location

Photos

SOIL SAMPLING (XS110)

Project no.	318,001,660	**Sample ID**	XS110
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	14:42	**End time**	14:43
Date	20/06/2023	**Operator**	Other
Sample appearance Gravely silt sample taken			
Comments Pb 0, Cu 44, Zn 201, As 0			

Location

Photos

	
	For locations and contacts throughout Australia visit www.envirolab.com.au ENVIROLAB RAMBOLL Project: 318001660 Sample ID: XS110 Depth: Surface Date: 20/6/23 Sampled by: SC EJ This bottle does not contain any preservative Fill container to the top with sample and chill

SOIL SAMPLING (XS109)

Project no.	318,001,660	**Sample ID**	XS109
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	14:40	**End time**	14:41
Date	20/06/2023	**Operator**	Other
Sample appearance Gravely silt			
Comments Pb 0, Cu 0 , Zn 25, As 0			

Location

Photos

SOIL SAMPLING (XS108)

Project no.	318,001,660	**Sample ID**	XS108
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	13:58	**End time**	14:00
Date	20/06/2023	**Operator**	Other

Sample appearance
Gravely silt

Comments
Pb 28, Cu 0 , Zn 99, As 0

Location

Photos

SOIL SAMPLING (XS107)

Project no.	318,001,660	**Sample ID**	XS107
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	13:56	**End time**	13:57
Date	20/06/2023	**Operator**	Other

Sample appearance
Gravely silt

Comments
Pb 17, Cu 0 , Zn 106, As 0

Location

Photos

SOIL SAMPLING (XS106)

Project no.	318,001,660	**Sample ID**	XS106
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	13:54	**End time**	13:55
Date	20/06/2023	**Operator**	Other

Sample appearance
Gravely silt

Comments
Pb 30, Cu 0 , Zn 90, As 0

Location

Photos

SOIL SAMPLING (XS105)

Project no.	318,001,660	**Sample ID**	XS105
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	13:51	**End time**	13:52
Date	20/06/2023	**Operator**	Other
Sample appearance Gravely silt			
Comments Pb 0, Cu 0 , Zn 0, As 0			

Location

Photos

SOIL SAMPLING (XS104)

Project no.	318,001,660	**Sample ID**	XS104
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	13:49	**End time**	13:50
Date	20/06/2023	**Operator**	Other

Sample appearance
Gravely silt

Comments
Pb 0, Cu 0 , Zn 43, As 0

Location

Photos

SOIL SAMPLING (XS103)

Project no.	318,001,660	**Sample ID**	XS103
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	13:47	**End time**	13:48
Date	20/06/2023	**Operator**	Other

Sample appearance Gravely silt
Comments Pb 15 , Cu 0 , Zn 0, As 0

Location

Photos

SOIL SAMPLING (XS102)

Project no.	318,001,660	**Sample ID**	XS102
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	13:45	**End time**	13:46
Date	20/06/2023	**Operator**	Other

Sample appearance
Gravely silt

Comments
Pb 0 , Cu 0 , Zn 107, As 0

Location

Photos

SOIL SAMPLING (XS101)

Project no.	318,001,660	**Sample ID**	XS101
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	13:42	**End time**	13:43
Date	20/06/2023	**Operator**	Other
Sample appearance Gravely silt			
Comments Pb 0 , Cu 0 , Zn 154, As 0			

Location

Photos

SOIL SAMPLING (XS100)

Project no.	318,001,660	**Sample ID**	XS100
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	13:29	**End time**	13:30
Date	20/06/2023	**Operator**	Other

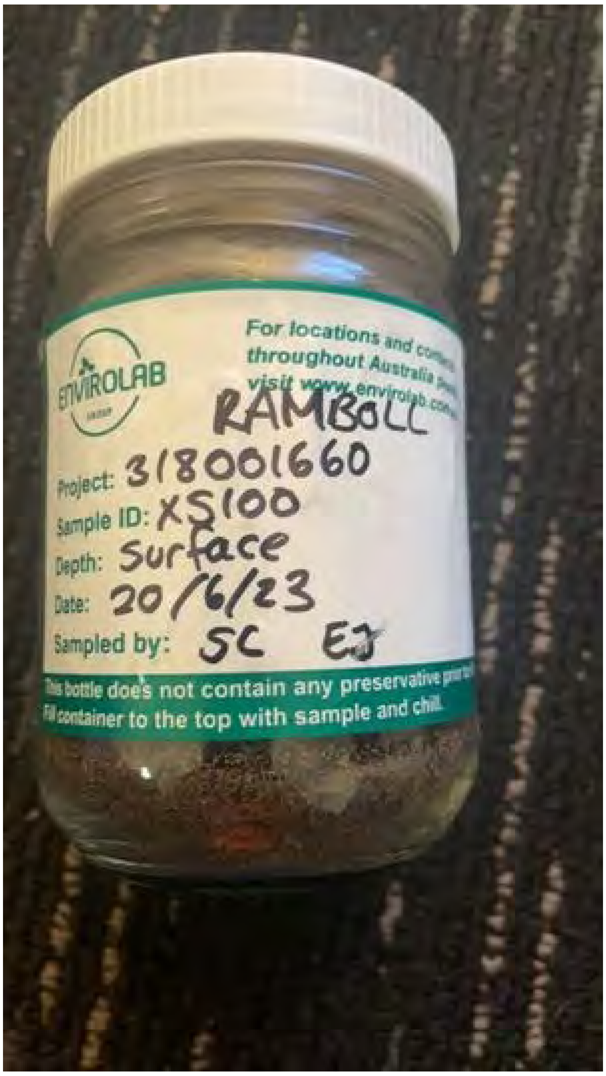
Sample appearance
Gravely silt sample taken

Comments
Pb 100 , Cu 27 , Zn 172 , As 0

Location

Photos

	For locations and contacts throughout Australia ENVIROLAB RAMBOLL Project: 318001660 Sample ID: XS100 Depth: Surface Date: 20/6/23 Sampled by: SC EJ This bottle does not contain any preservative Fill container to the top with sample and chill.

SOIL SAMPLING (XS099)

Project no.	318,001,660	**Sample ID**	XS099
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	13:27	**End time**	13:28
Date	20/06/2023	**Operator**	Other

Sample appearance
Gravely silt

Comments
Pb 24 , Cu 38 , Zn 67 , As 0

Location

Photos

SOIL SAMPLING (XS098)

Project no.	318,001,660	**Sample ID**	XS098
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	13:24	**End time**	13:25
Date	20/06/2023	**Operator**	Other
Sample appearance Gravely silt			
Comments Pb 10, Cu 27, Zn 74, As 0			

Location

Photos

SOIL SAMPLING (XS097)

Project no.	318,001,660	**Sample ID**	XS097
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	13:22	**End time**	13:23
Date	20/06/2023	**Operator**	Other

Sample appearance
Gravely silt

Comments
Pb 50, Cu 38, Zn 92, As 0

Location

Photos

SOIL SAMPLING (XS096)

Project no.	318,001,660	**Sample ID**	XS096
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	13:19	**End time**	13:20
Date	20/06/2023	**Operator**	Other

Sample appearance
Gravely silt

Comments
Pb 58, Cu 0, Zn 106, As 0

Location

Photos

SOIL SAMPLING (XS095)

Project no.	318,001,660	**Sample ID**	XS095
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	13:17	**End time**	13:18
Date	20/06/2023	**Operator**	Other

Sample appearance
Gravely silt

Comments
Pb 30, Cu 0, Zn 0, As 0

Location

Photos

SOIL SAMPLING (XS094)

Project no.	318,001,660	**Sample ID**	XS094
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	13:15	**End time**	13:16
Date	20/06/2023	**Operator**	Other
Sample appearance Gravely silt			
Comments Pb 46, Cu 0, Zn 126, As 0			

Location

Photos

SOIL SAMPLING (XS093)

Project no.	318,001,660	**Sample ID**	XS093
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	12:47	**End time**	12:48
Date	20/06/2023	**Operator**	Other

Sample appearance
silty sand

Comments
Pb 66, Cu 22, Zn 147, As 0

Location

Photos

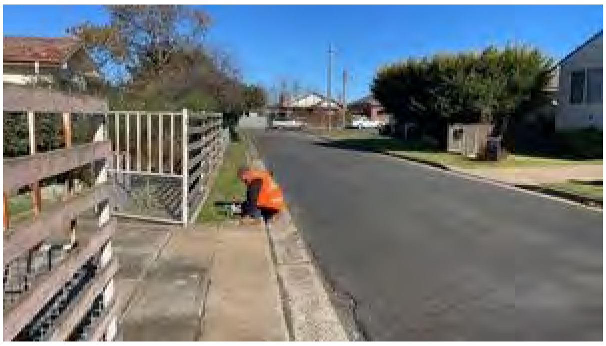
	

SOIL SAMPLING (XS092)

Project no.	318,001,660	**Sample ID**	XS092
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	12:44	**End time**	12:45
Date	20/06/2023	**Operator**	Other
Sample appearance silty sand			
Comments Pb 65, Cu 22, Zn 800, As 0			

Location

Photos

SOIL SAMPLING (XS091)

Project no.	318,001,660	**Sample ID**	XS091
Project name	Goulburn wheatyards offsite lead deliniation	**Sample type**	XRF
Start time	12:41	**End time**	12:42
Date	20/06/2023	**Operator**	Other

Sample appearance
Gravely silty sand

Comments
Pb 60, Cu 0, Zn 139, As 0

Location

Photos

SOIL SAMPLING (XS215)

Project no.	318,001,660	**Sample ID**	XS215
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	12:31	**End time**	12:32
Date	21/06/2023	**Operator**	Other
Sample appearance No sample could be taken			
Comments Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete			

Location

Photos

SOIL SAMPLING (XS214)

Project no.	318,001,660	**Sample ID**	XS214
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	12:29	**End time**	12:30
Date	21/06/2023	**Operator**	Other

Sample appearance

No sample could be taken

Comments

Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete

Location

Photos

SOIL SAMPLING (XS213)

Project no.	318,001,660	**Sample ID**	XS213
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	12:27	**End time**	12:28
Date	21/06/2023	**Operator**	Other
Sample appearance No sample could be taken			
Comments Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete			

Location

Photos

SOIL SAMPLING (XS212)

Project no.	318,001,660	**Sample ID**	XS212
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	12:23	**End time**	12:24
Date	21/06/2023	**Operator**	Other

Sample appearance

No sample could be taken

Comments

Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete

Location

Photos

SOIL SAMPLING (XS211)

Project no.	318,001,660	**Sample ID**	XS211
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	12:23	**End time**	12:24
Date	21/06/2023	**Operator**	Other

Sample appearance
No sample could be taken

Comments
Sample can not be taken due to ashphalt pavement, concrete gutter and a high fence on concrete

Location

Photos

SOIL SAMPLING (XS210)

Project no.	318,001,660	**Sample ID**	XS210
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	12:05	**End time**	12:06
Date	21/06/2023	**Operator**	Other

Sample appearance

Pb 0, Cu 0 , Zn 87 , As 0

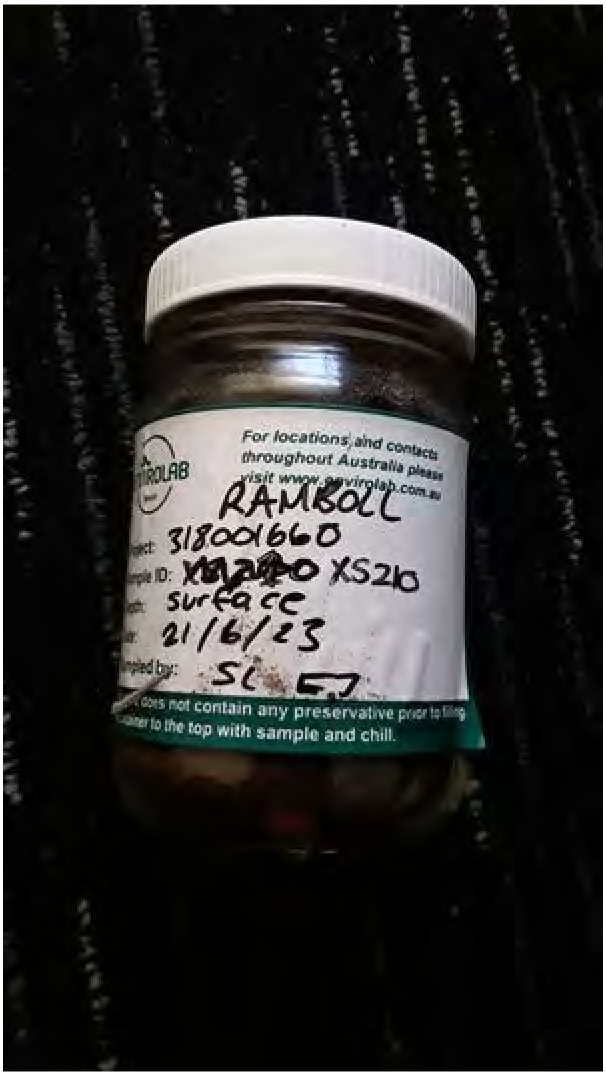
Comments

Fine gravely sandy silt, sample taken

Location

Photos

	60
	60


For locations and contacts
throughout Australia please
visit www.envirolab.com.au
RAMBOLL
318001660
XS210
surface
21/6/23
SC EJ
does not contain any preservative prior to filling
to the top with sample and chill.

SOIL SAMPLING (XS209)

Project no.	318,001,660	**Sample ID**	XS209
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	12:03	**End time**	12:04
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 14, Cu 0 , Zn 42 , As 0			
Comments Fine gravely sandy silt			

Location

Photos

SOIL SAMPLING (XS208)

Project no.	318,001,660	**Sample ID**	XS208
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	12:01	**End time**	12:02
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0 , Zn 0 , As 22			
Comments Fine gravely sandy silt			

Location

Photos

SOIL SAMPLING (XS206)

Project no.	318,001,660	**Sample ID**	XS206
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:56	**End time**	11:57
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 33, Cu 0 , Zn 120 , As 0

Comments
Fine gravely sandy silt

Location

Photos

SOIL SAMPLING (XS205)

Project no.	318,001,660	**Sample ID**	XS205
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:54	**End time**	11:55
Date	21/06/2023	**Operator**	Other

Sample appearance

Pb 35, Cu 0 , Zn 73 , As 0

Comments

Fine gravely sandy silt

Location

Photos

SOIL SAMPLING (XS204)

Project no.	318,001,660	**Sample ID**	XS204
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:52	**End time**	11:53
Date	21/06/2023	**Operator**	Other

Sample appearance

Pb 0, Cu 0 , Zn 107 , As 0

Comments

Fine gravely sandy silt

Location

Photos

SOIL SAMPLING (XS203)

Project no.	318,001,660	**Sample ID**	XS203
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:50	**End time**	11:51
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 28, Cu 0 , Zn 163 , As 0

Comments
Fine gravely silty sand

Location

Photos

SOIL SAMPLING (XS202)

Project no.	318,001,660	**Sample ID**	XS202
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:47	**End time**	11:48
Date	21/06/2023	**Operator**	Other

Sample appearance

Pb 0, Cu 0 , Zn 0 , As 0

Comments

Fine gravely silty sand

Location

Photos

SOIL SAMPLING (XS200)

Project no.	318,001,660	**Sample ID**	XS200
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:31	**End time**	11:32
Date	21/06/2023	**Operator**	Other

Sample appearance

Pb 26, Cu 0 , Zn 77 , As 0

Comments

Fine gravely silt, sample duplicate and triplicate taken D01 T01

Location

Photos


RAMBOLL
318001660
XS200
Surface
SC EJ
RAMBOLL
318001660
D01
Surface
21/6/23
SC EJ
RAMBOLL
T01
Surface
21/6/23
SC EJ

SOIL SAMPLING (XS199)

Project no.	318,001,660	**Sample ID**	XS199
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:29	**End time**	11:30
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 71, Cu 0 , Zn 0 , As 0

Comments
Fine gravely silt

Location

Photos

SOIL SAMPLING (XS198)

Project no.	318,001,660	**Sample ID**	XS198
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:27	**End time**	11:28
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 99, Cu 0 , Zn 0 , As 0			
Comments Gravely silty sand			

Location

Photos

SOIL SAMPLING (XS197)

Project no.	318,001,660	**Sample ID**	XS197
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:25	**End time**	11:26
Date	21/06/2023	**Operator**	Other

Sample appearance

Pb 83, Cu 0 , Zn 0 , As 0

Comments

Gravely silty sand

Location

Photos

SOIL SAMPLING (XS196)

Project no.	318,001,660	**Sample ID**	XS196
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:23	**End time**	11:24
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 110, Cu 0 , Zn 63 , As 0

Comments
Gravely silty sand

Location

Photos

SOIL SAMPLING (XS195)

Project no.	318,001,660	**Sample ID**	XS195
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:21	**End time**	11:22
Date	21/06/2023	**Operator**	Other

Sample appearance

Pb 71, Cu 0 , Zn 0 , As 0

Comments

Gravely silty sand

Location

Photos

SOIL SAMPLING (XS194)

Project no.	318,001,660	**Sample ID**	XS194
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:19	**End time**	11:20
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 36 , Zn 53 , As 0			
Comments Gravely silty sand			

Location

Photos

SOIL SAMPLING (XS193)

Project no.	318,001,660	**Sample ID**	XS193
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:17	**End time**	11:18
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0 , Zn 107 , As 0

Comments
Gravely silty sand

Location

Photos

SOIL SAMPLING (XS192)

Project no.	318,001,660	**Sample ID**	XS192
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:15	**End time**	11:16
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0 , Zn 0 , As 0			
Comments Gravely silty sand			

Location

Photos

SOIL SAMPLING (XS191)

Project no.	318,001,660	**Sample ID**	XS191
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:12	**End time**	11:13
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 10, Cu 22 , Zn 77 , As 0			
Comments Gravely silty sand			

Location

Photos

SOIL SAMPLING (XS189)

Project no.	318,001,660	**Sample ID**	XS189
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:01	**End time**	11:02
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 15, Cu 0 , Zn 0 , As 0			
Comments Gravely silty sand light brown			

Location

Photos

SOIL SAMPLING (XS188)

Project no.	318,001,660	**Sample ID**	XS188
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	10:59	**End time**	11:00
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0 , Zn 0 , As 0

Comments
Gravely silty sand light brown

Location

Photos

SOIL SAMPLING (XS187)

Project no.	318,001,660	**Sample ID**	XS187
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	10:57	**End time**	10:58
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 23, Cu 0 , Zn34 , As 0

Comments
Gravely silty sand dark brown

Location

Photos

SOIL SAMPLING (XS186)

Project no.	318,001,660	**Sample ID**	XS186
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	10:54	**End time**	10:55
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 44, Cu 30 , Zn 116, As 9

Comments
Gravely silty sand dark brown

Location

Photos

SOIL SAMPLING (XS185)

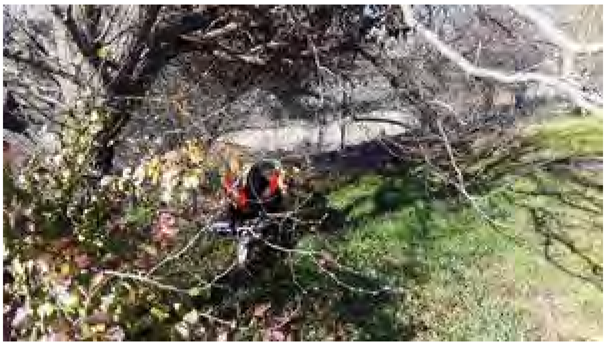
Project no.	318,001,660	**Sample ID**	XS185
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	10:52	**End time**	10:53
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 33, Cu 31 , Zn 97, As 0

Comments
Gravely silty sand dark brown

Location

Photos

SOIL SAMPLING (XS184)

Project no.	318,001,660	**Sample ID**	XS184
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	10:50	**End time**	10:51
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0 , Zn 0, As 0

Comments
Gravely silty sand dark brown

Location

Photos

SOIL SAMPLING (XS183)

Project no.	318,001,660	**Sample ID**	XS183
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	10:48	**End time**	10:49
Date	21/06/2023	**Operator**	Other

Sample appearance

Pb 19, Cu 0 , Zn 112, As 0

Comments

Gravely silty sand dark brown

RAMBOLL

Location

Photos

SOIL SAMPLING (XS182)

Project no.	318,001,660	**Sample ID**	XS182
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	10:45	**End time**	10:46
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0 , Zn 0, As 0

Comments
Gravely silty sand dark brown

Location

Photos

SOIL SAMPLING (XS181)

Project no.	318,001,660	**Sample ID**	XS181
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	10:42	**End time**	10:43
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0 , Zn 174, As 0

Comments
Gravely silty sand dark brown

Location

Photos

SOIL SAMPLING (XS180)

Project no.	318,001,660	**Sample ID**	XS180
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:47	**End time**	09:48
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0 , Zn 0, As 22			
Comments Gravely silty sand			

Location

Photos

SOIL SAMPLING (XS179)

Project no.	318,001,660	**Sample ID**	XS179
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:44	**End time**	09:45
Date	21/06/2023	**Operator**	Other

Sample appearance

Pb 37, Cu 0 , Zn 150, As 0

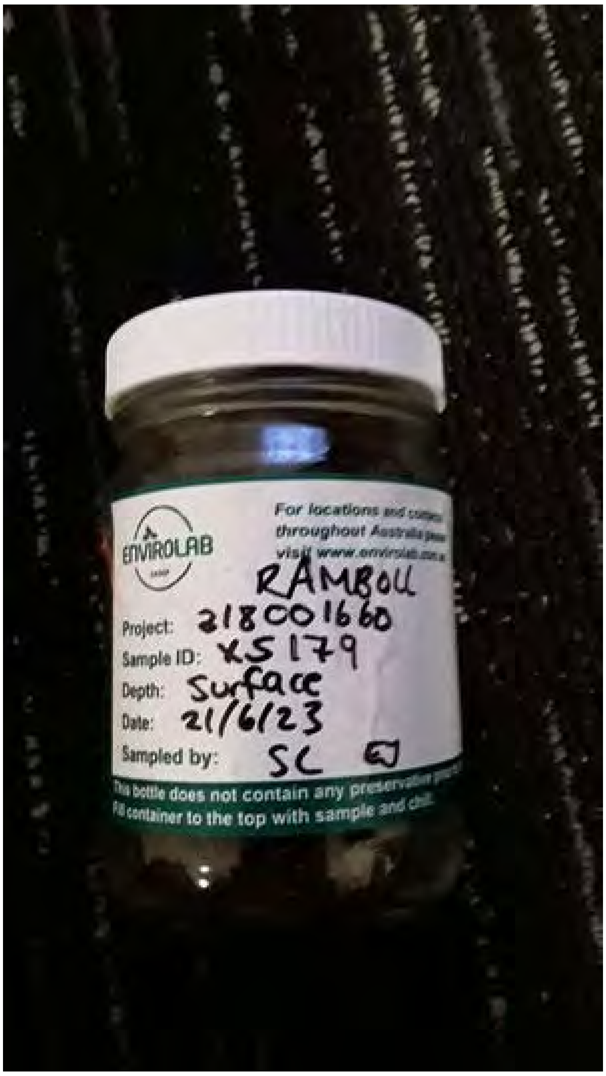
Comments

Gravely silty sand sample taken

Location

Photos

	ENVIROLAB For locations and contacts throughout Australia please visit www.envirolab.com.au RAMBOLL Project: 318001660 Sample ID: XS179 Depth: Surface Date: 21/6/23 Sampled by: SC EJ This bottle does not contain any preservative Fill container to the top with sample and chill.

SOIL SAMPLING (XS178)

Project no.	318,001,660	**Sample ID**	XS178
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:41	**End time**	09:43
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0 , Zn 0, As 0			
Comments Gravely silty sand			

Location

Photos

SOIL SAMPLING (XS177)

Project no.	318,001,660	**Sample ID**	XS177
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:39	**End time**	09:40
Date	21/06/2023	**Operator**	Other

Sample appearance

Pb 26, Cu 24 , Zn 287, As 0

Comments

Gravely silty sand

Location

Photos

SOIL SAMPLING (XS176)

Project no.	318,001,660	**Sample ID**	XS176
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:34	**End time**	09:35
Date	21/06/2023	**Operator**	Other

Sample appearance

Pb 45, Cu 0 , Zn 112, As 0

Comments

Gravely silty sand

Location

Photos

SOIL SAMPLING (XS175)

Project no.	318,001,660	**Sample ID**	XS175
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:31	**End time**	09:32
Date	21/06/2023	**Operator**	Other

Sample appearance

Pb 0, Cu 0 , Zn 0, As 0

Comments

Gravely silty sand

Location

Photos

SOIL SAMPLING (XS174)

Project no.	318,001,660	**Sample ID**	XS174
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:28	**End time**	09:29
Date	21/06/2023	**Operator**	Other

Sample appearance

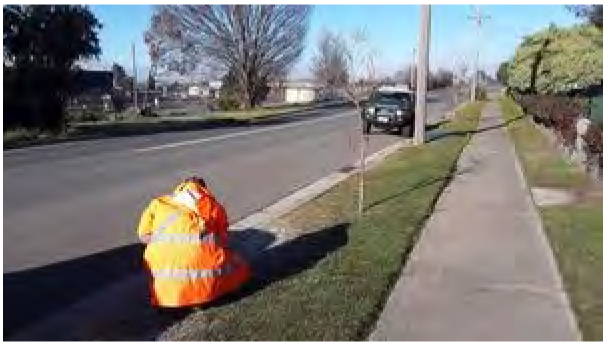
Pb 0, Cu 0 , Zn 0, As 23

Comments

Gravely silty sand

Location

Photos

SOIL SAMPLING (XS173)

Project no.	318,001,660	**Sample ID**	XS173
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:26	**End time**	09:27
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0 , Zn 72, As 0			
Comments Gravely silty sand			

Location

Photos

SOIL SAMPLING (XS172)

Project no.	318,001,660	**Sample ID**	XS172
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:23	**End time**	09:24
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0 , Zn 0, As 0

Comments
Gravely silty sand

RAMBOLL

Location

Photos

SOIL SAMPLING (XS171)

Project no.	318,001,660	**Sample ID**	XS171
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:20	**End time**	09:21
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 91, Cu 0 , Zn 155, As 0			
Comments Gravely silty sand			

Location

Photos

SOIL SAMPLING (XS170)

Project no.	318,001,660	**Sample ID**	XS170
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:12	**End time**	09:13
Date	21/06/2023	**Operator**	Other

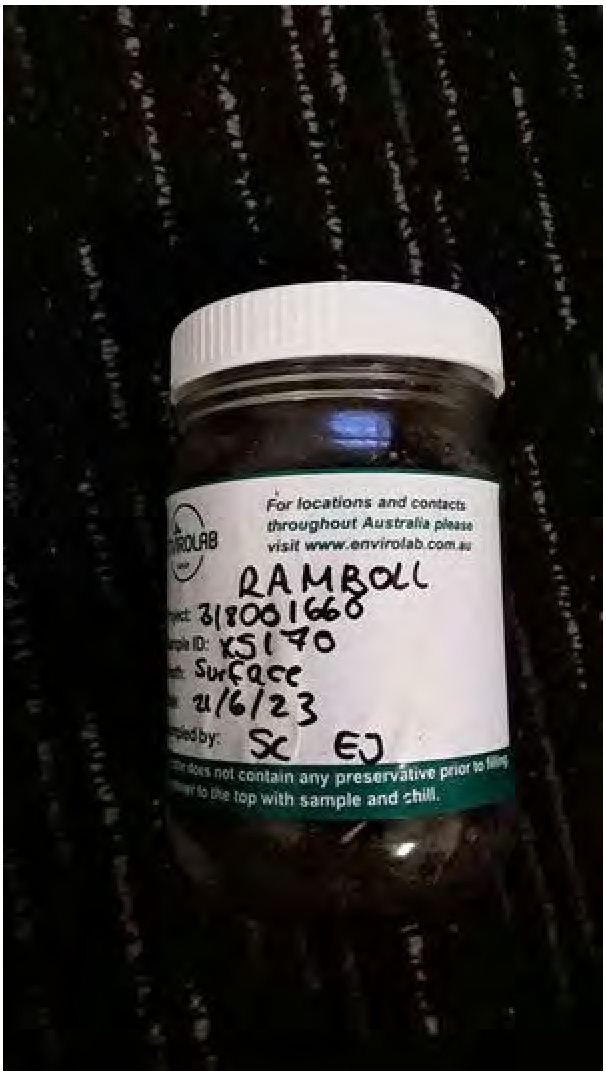
Sample appearance
Pb 0, Cu 0 , Zn 0, As 0

Comments
Gravely silty sand sample taken

Location

Photos

For locations and contacts throughout Australia please visit www.envirolab.com.au
RAMBOLL
318001660
XS170
Surface
21/6/23
SC EJ
does not contain any preservative prior to filling
to the top with sample and chill.

SOIL SAMPLING (XS169)

Project no.	318,001,660	**Sample ID**	XS169
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:09	**End time**	09:10
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 13, Cu 0 , Zn 52, As 12			
Comments Gravely silty sand			

Location

Photos

SOIL SAMPLING (XS168)

Project no.	318,001,660	**Sample ID**	XS168
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:06	**End time**	09:07
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 14, Cu 0 , Zn 68, As 0			
Comments Gravely silty sand			

Location

Photos

SOIL SAMPLING (XS167)

Project no.	318,001,660	**Sample ID**	XS167
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:03	**End time**	09:04
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0 , Zn 0, As 0			
Comments Gravely silty sand			

Location

Photos

SOIL SAMPLING (XS166)

Project no.	318,001,660	**Sample ID**	XS166
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:00	**End time**	09:01
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 53, Cu 0 , Zn 78, As 14			
Comments Gravely silty sand			

Location

Photos

SOIL SAMPLING (XS165)

Project no.	318,001,660	**Sample ID**	XS165
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:57	**End time**	08:58
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 124, Cu 0 , Zn 0, As 0

Comments
Gravely silt

Location

Photos

SOIL SAMPLING (XS164)

Project no.	318,001,660	**Sample ID**	XS164
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:54	**End time**	08:55
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 76 , Zn 0, As 0			
Comments Gravely silt			

Location

Photos

	 THE PINES
	

SOIL SAMPLING (XS163)

Project no.	318,001,660	**Sample ID**	XS163
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:51	**End time**	08:52
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 36, Cu 40 , Zn 121, As 0

Comments
Gravely silt

Location

Photos

SOIL SAMPLING (XS162)

Project no.	318,001,660	**Sample ID**	XS162
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:49	**End time**	08:50
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0 , Zn 183, As 0			
Comments Gravely silt			

Location

Photos

SOIL SAMPLING (XS161)

Project no.	318,001,660	**Sample ID**	XS161
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:46	**End time**	08:47
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 27, Cu 0 , Zn 164, As 0			
Comments Gravely silty sand			

Location

Photos

SOIL SAMPLING (XS160)

Project no.	318,001,660	**Sample ID**	XS160
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:20	**End time**	08:21
Date	21/06/2023	**Operator**	Other

Sample appearance

Pb 0, Cu 0 , Zn 0, As 0

Comments

Gravely silty sand sample taken

Location

Photos


For locations and contacts throughout Australia please visit www.envirolab.com.au
ENVIROLAB
RAMBOLL
Project: 318001660
Sample ID: XS160
Depth: surface
Date: 21/6/23
Sampled by: SC EJ
does not contain any preservative
container to the top with sample and chill

SOIL SAMPLING (XS159)

Project no.	318,001,660	**Sample ID**	XS159
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:18	**End time**	08:19
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0 , Zn 0, As 0			
Comments Gravely silty sand medium sized gravel			

Location

Photos

SOIL SAMPLING (XS158)

Project no.	318,001,660	**Sample ID**	XS158
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:14	**End time**	08:15
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0 , Zn 41, As 14

Comments
Gravely silty sand

Location

Photos

SOIL SAMPLING (XS157)

Project no.	318,001,660	**Sample ID**	XS157
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:12	**End time**	08:13
Date	21/06/2023	**Operator**	Other

Sample appearance Pb 0, Cu 0 , Zn 0, As 0
Comments Gravely silty sand

Location

Photos

SOIL SAMPLING (XS156)

Project no.	318,001,660	**Sample ID**	XS156
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:08	**End time**	08:09
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0 , Zn 0, As 0			
Comments Gravely silty sand			

Location

Photos

SOIL SAMPLING (XS155)

Project no.	318,001,660	**Sample ID**	XS155
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:01	**End time**	08:03
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 86, Cu 0 , Zn 148, As 0

Comments
Gravely silty sand

Location

Photos

SOIL SAMPLING (XS154)

Project no.	318,001,660	**Sample ID**	XS154
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	07:58	**End time**	07:59
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0 , Zn 0, As 0

Comments
Gravely silty sand

Location

Photos

SOIL SAMPLING (XS153)

Project no.	318,001,660	**Sample ID**	XS153
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	07:55	**End time**	07:56
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0 , Zn 0, As 0			
Comments Gravely silty sand			

Location

Photos

SOIL SAMPLING (XS152)

Project no.	318,001,660	**Sample ID**	XS152
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	07:52	**End time**	07:53
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0 , Zn 61, As 0

Comments
Gravely silty sand

Location

Photos

SOIL SAMPLING (XS151)

Project no.	318,001,660	**Sample ID**	XS151
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	07:49	**End time**	07:50
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0 , Zn 0, As 0			
Comments Gravely silty sand			

Location

Photos

SOIL SAMPLING (XS150)

Project no.	318,001,660	**Sample ID**	XS150
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	07:37	**End time**	07:38
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0 , Zn 159, As 0			
Comments Gravely silty sand sample taken			

Location

Photos


For locations and contacts
throughout Australia please
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ENVIROLAB
RAMBOLL
Project: 318001660
Sample ID: XS150
Depth: Surface
Date: 21/6/23
Sampled by: SC
This bottle does not contain any preservative
Fill container to the top with sample and chill.

SOIL SAMPLING (XS149)

Project no.	318,001,660	**Sample ID**	XS149
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	07:34	**End time**	07:35
Date	21/06/2023	**Operator**	Other

Sample appearance
Pb 10, Cu 34 , Zn 187, As 0

Comments
Gravely silty sand

Location

Photos

SOIL SAMPLING (XS148)

Project no.	318,001,660	**Sample ID**	XS148
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	07:32	**End time**	07:33
Date	21/06/2023	**Operator**	Other

Sample appearance

Pb 0, Cu 0 , Zn 0, As 0

Comments

Gravely silty sand

Location

Photos

SOIL SAMPLING (XS147)

Project no.	318,001,660	**Sample ID**	XS147
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	07:28	**End time**	07:29
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 87 , Zn 0, As 0			
Comments Gravely silty sand			

Location

Photos

SOIL SAMPLING (XS146)

Project no.	318,001,660	**Sample ID**	XS146
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	07:24	**End time**	07:25
Date	21/06/2023	**Operator**	Other

Sample appearance Pb 0, Cu0 , Zn 0, As 0
Comments Gravely sandy silt

Location

Photos

SOIL SAMPLING (XS145)

Project no.	318,001,660	**Sample ID**	XS145
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	07:22	**End time**	07:23
Date	21/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu0 , Zn 59, As 0			
Comments Gravely sandy silt			

Location

Photos

SOIL SAMPLING (XS090)

Project no.	318,001,660	**Sample ID**	XS090
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	12:24	**End time**	12:26
Date	20/06/2023	**Operator**	Other

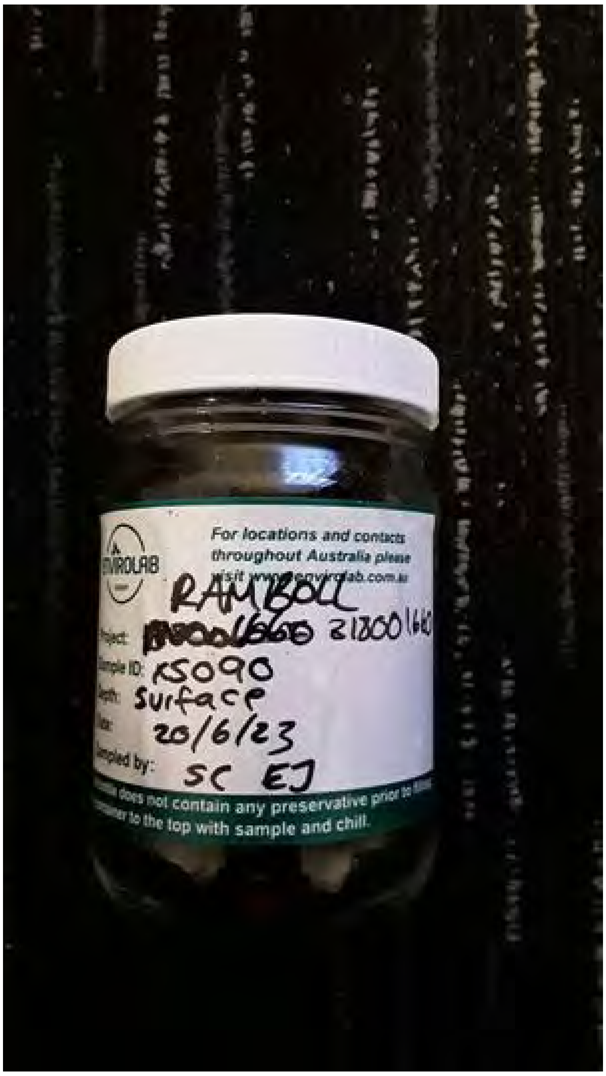
Sample appearance
Pb 52, Cu 26, Zn 287, As 0

Comments
Gravely silt sample taken

Location

Photos


For locations and contacts
throughout Australia please
ENVIROLAB
RAMBOLL
Project:
KS090
Surface
20/6/23
SC EJ
does not contain any preservative prior to
to the top with sample and chill.

SOIL SAMPLING (XS089)

Project no.	318,001,660	**Sample ID**	XS089
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	12:21	**End time**	12:22
Date	20/06/2023	**Operator**	Other

Sample appearance
Pb 16, Cu 0, Zn 448, As 0

Comments
Gravely silt

Location

Photos

SOIL SAMPLING (XS088)

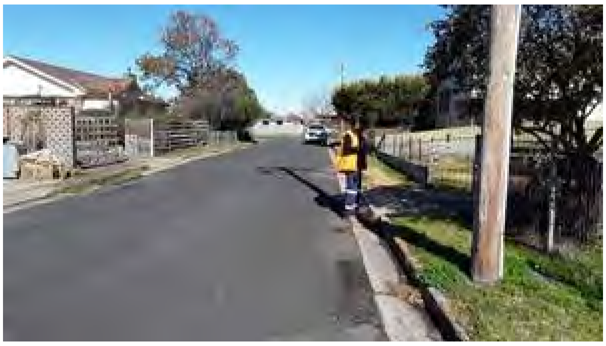
Project no.	318,001,660	**Sample ID**	XS088
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	12:16	**End time**	12:17
Date	20/06/2023	**Operator**	Other

Sample appearance
Pb 72, Cu 0, Zn 294, As 0

Comments
Gravely silt

Location

Photos

SOIL SAMPLING (XS087)

Project no.	318,001,660	**Sample ID**	XS087
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	12:14	**End time**	12:15
Date	20/06/2023	**Operator**	Other

Sample appearance
Pb 25, Cu 0, Zn 81, As 0

Comments
Gravely silt

Location

Photos

	 SOLD
	

SOIL SAMPLING (XS086)

Project no.	318,001,660	**Sample ID**	XS086
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	12:12	**End time**	12:13
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 38, Cu 0, Zn 152, As 0			
Comments Silty sand			

Location

Photos

SOIL SAMPLING (XS085)

Project no.	318,001,660	**Sample ID**	XS085
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	00:08	**End time**	00:10
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 14, Cu 0, Zn 44, As 0			
Comments Silty sand			

Location

Photos

SOIL SAMPLING (XS084)

Project no.	318,001,660	**Sample ID**	XS084
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	00:04	**End time**	00:06
Date	20/06/2023	**Operator**	Other

Sample appearance
Pb 28, Cu 0, Zn 186, As 0

Comments
Silty gravely sand

Location

Photos

SOIL SAMPLING (XS083)

Project no.	318,001,660	**Sample ID**	XS083
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	00:01	**End time**	00:02
Date	20/06/2023	**Operator**	Other

Sample appearance

Pb 36, Cu 0, Zn 119, As 0

Comments

Silty gravely sand

Location

Photos

SOIL SAMPLING (XS081)

Project no.	318,001,660	**Sample ID**	XS081
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:56	**End time**	11:57
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0, Zn 0, As 0			
Comments Silty gravely sand			

Location

Photos

SOIL SAMPLING (XS080)

Project no.	318,001,660	**Sample ID**	XS080
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:41	**End time**	11:42
Date	20/06/2023	**Operator**	Other

Sample appearance
Pb 104, Cu 47, Zn 365, As 0

Comments
Silty gravely sand sample taken

Location

Photos

	 ENVIROLAB For locations throughout RAMBOLL Project: Sample ID: X6080 Depth: Surface Date: 20/6/23 SC ED not contain any preservative the top with sample and chill

SOIL SAMPLING (DS01)

Project no.	318,001,660	**Sample ID**	DS01
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:39	**End time**	11:40
Date	20/06/2023	**Operator**	Other

Sample appearance

Pb 28, Cu 0, Zn 0, As 0

Comments

Sediment from drain DS

Location

Photos

SOIL SAMPLING (XS079)

Project no.	318,001,660	**Sample ID**	XS079
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:32	**End time**	11:34
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 35, Zn 42, As 0			
Comments gravely silt			

Location

Photos

SOIL SAMPLING (XS078)

Project no.	318,001,660	**Sample ID**	XS078
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:29	**End time**	11:31
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 72, Cu 25, Zn 254, As 12			
Comments gravely silty sand			

Location

Photos

SOIL SAMPLING (XS077)

Project no.	318,001,660	**Sample ID**	XS077
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:27	**End time**	11:28
Date	20/06/2023	**Operator**	Other

Sample appearance

Pb 49, Cu 43, Zn 218, As 0

Comments

gravely silty sand

Location

Photos

SOIL SAMPLING (XS076)

Project no.	318,001,660	**Sample ID**	XS076
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:25	**End time**	11:26
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 28, Cu 0, Zn 110, As 11			
Comments gravely silt			

Location

Photos

SOIL SAMPLING (XS075)

Project no.	318,001,660	**Sample ID**	XS075
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:22	**End time**	11:23
Date	20/06/2023	**Operator**	Other

Sample appearance
Pb 34, Cu 39, Zn 138, As 0

Comments
gravely silt

Location

Photos

SOIL SAMPLING (XS074)

Project no.	318,001,660	**Sample ID**	XS074
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:20	**End time**	11:21
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 32, Cu 21, Zn 88, As 0			
Comments gravely silt			

Location

Photos

SOIL SAMPLING (XS073)

Project no.	318,001,660	**Sample ID**	XS073
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	11:16	**End time**	11:18
Date	20/06/2023	**Operator**	Other

Sample appearance

Pb 62, Cu 46, Zn 284, As 0

Comments

gravely silty sand

Location

Photos

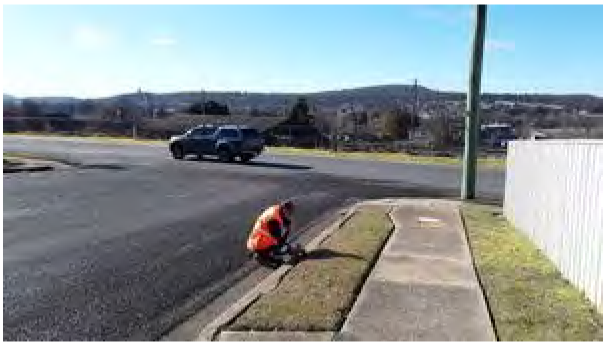
	
	

SOIL SAMPLING (XS072)

Project no.	318,001,660	**Sample ID**	XS072
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	10:21	**End time**	10:22
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 24, Cu 0, Zn 27, As 0			
Comments gravely silt			

Location

Photos

SOIL SAMPLING (XS071)

Project no.	318,001,660	**Sample ID**	XS071
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	10:18	**End time**	10:20
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0, Zn 0, As 0			
Comments gravely silt			

Location

Photos

SOIL SAMPLING (XS070)

Project no.	318,001,660	**Sample ID**	XS070
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	10:11	**End time**	10:12
Date	20/06/2023	**Operator**	Other

Sample appearance
Pb 31, Cu 0, Zn 31, As 0

Comments
gravely silty sand sample taken

Location

Photos

SOIL SAMPLING (XS069)

Project no.	318,001,660	**Sample ID**	XS069
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	10:09	**End time**	10:10
Date	20/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0, Zn 42, As 0

Comments
gravely silty sand

RAMBOLL

Location

Photos

SOIL SAMPLING (XS068)

Project no.	318,001,660	**Sample ID**	XS068
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	10:07	**End time**	10:08
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0, Zn 15, As 0			
Comments gravely silt medium gravel			

Location

Photos

SOIL SAMPLING (XS067)

Project no.	318,001,660	**Sample ID**	XS067
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	10:04	**End time**	10:05
Date	20/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0, Zn 76, As 0

Comments
gravely silty sand light brown small gravel pieces

Location

Photos

SOIL SAMPLING (XS066)

Project no.	318,001,660	**Sample ID**	XS066
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	10:01	**End time**	10:02
Date	20/06/2023	**Operator**	Other

Sample appearance
Pb 30, Cu 0, Zn 0, As 0

Comments
gravely silty sand light brown small gravel pieces

Location

Photos

SOIL SAMPLING (XS065)

Project no.	318,001,660	**Sample ID**	XS065
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:59	**End time**	10:00
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 33, Cu 44, Zn 38, As 0			
Comments gravely silty sand			

Location

Photos

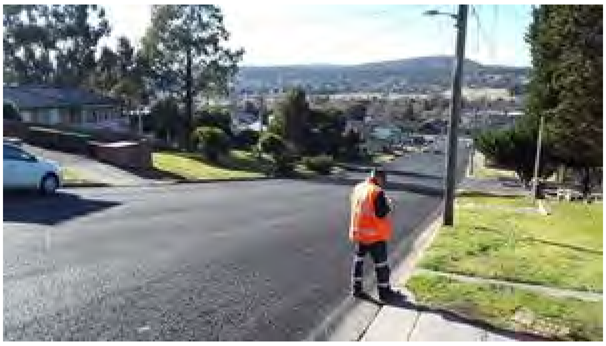
RAMBOLL

SOIL SAMPLING (XS064)

Project no.	318,001,660	**Sample ID**	XS064
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:56	**End time**	09:57
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0, Zn 42, As 0			
Comments gravely silty sand			

Location

Photos

SOIL SAMPLING (XS063)

Project no.	318,001,660	**Sample ID**	XS063
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:54	**End time**	09:55
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 13, Cu 0, Zn 28, As 0			
Comments gravely silty sand			

Location

Photos

SOIL SAMPLING (XS062)

Project no.	318,001,660	**Sample ID**	XS062
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:51	**End time**	09:53
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 26, Cu 0, Zn 42, As 0			
Comments gravely silty sand			

Location

Photos

SOIL SAMPLING (XS061)

Project no.	318,001,660	**Sample ID**	XS061
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:48	**End time**	09:49
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 20, Cu 0, Zn 85, As 0			
Comments gravely silty sand dark brown			

Location

Photos

SOIL SAMPLING (XS060)

Project no.	318,001,660	**Sample ID**	XS060
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:36	**End time**	09:37
Date	20/06/2023	**Operator**	Other

Sample appearance

Pb 79, Cu 0, Zn 42, As 0

Comments

gravely silt dark brown sample taken

Location

Photos

ENVIROLAB
throughout Australia
visit www.envirolab.com.au
RAMBOLL
Project: 318001660
Sample ID: X5060
Depth: surface
Date: 20/6/23
Sampled by: SC EJ
bottle does not contain any preservative
container to the top with sample and chill.

SOIL SAMPLING (XS059)

Project no.	318,001,660	**Sample ID**	XS059
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:33	**End time**	09:34
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 13, Cu 0, Zn 0, As 0			
Comments gravely silt dark brown			

Location

Photos

SOIL SAMPLING (XS058)

Project no.	318,001,660	**Sample ID**	XS058
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:31	**End time**	09:32
Date	20/06/2023	**Operator**	Other

Sample appearance

Pb 13, Cu 0, Zn 44, As 0

Comments

gravely silt dark brown

Location

Photos

SOIL SAMPLING (XS057)

Project no.	318,001,660	**Sample ID**	XS057
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:28	**End time**	09:29
Date	20/06/2023	**Operator**	Other

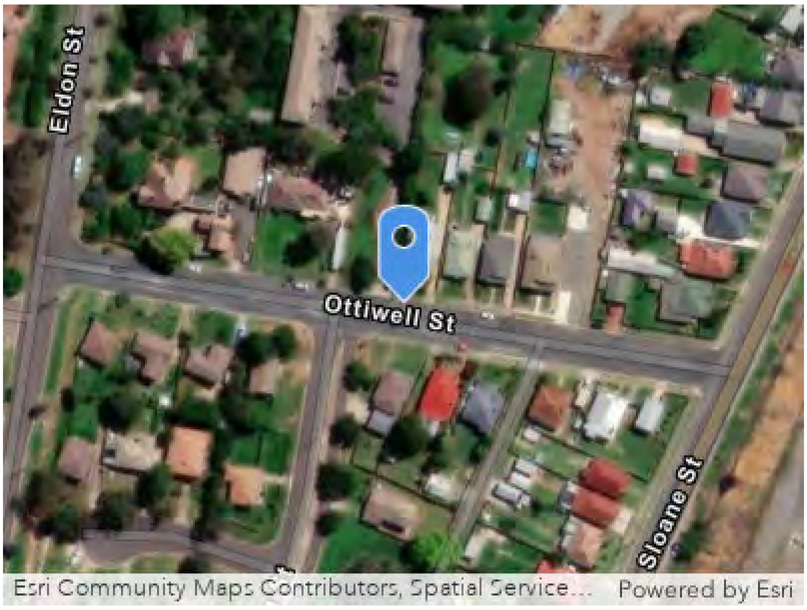
Sample appearance

Pb 0, Cu 0, Zn 33, As 0

Comments

gravely silt dark brown

Location



Photos

SOIL SAMPLING (XS056)

Project no.	318,001,660	**Sample ID**	XS056
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:24	**End time**	09:25
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0, Zn 32, As 0			
Comments gravely silty sand			

Location

Photos

SOIL SAMPLING (XS055)

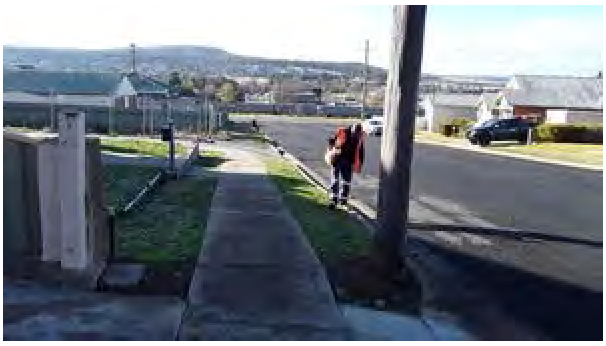
Project no.	318,001,660	**Sample ID**	XS055
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:21	**End time**	09:22
Date	20/06/2023	**Operator**	Other

Sample appearance
Pb 19, Cu 0, Zn 53, As 0

Comments
gravely silt

Location

Photos

SOIL SAMPLING (XS054)

Project no.	318,001,660	**Sample ID**	XS054
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:17	**End time**	09:19
Date	20/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0, Zn 53, As 0

Comments
gravely silt

Location

Photos

SOIL SAMPLING (XS053)

Project no.	318,001,660	**Sample ID**	XS053
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:15	**End time**	09:16
Date	20/06/2023	**Operator**	Other

Sample appearance

Pb 13, Cu 0, Zn 44, As 0

Comments

gravely silty sand

Location

Photos

SOIL SAMPLING (XS052)

Project no.	318,001,660	**Sample ID**	XS052
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:08	**End time**	09:10
Date	20/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0, Zn 70, As 0

Comments
gravely silty sand

Location

Photos

SOIL SAMPLING (XS051)

Project no.	318,001,660	**Sample ID**	XS051
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	09:05	**End time**	09:06
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0, Zn 25, As 0			
Comments gravely silty sand			

Location

Photos

SOIL SAMPLING (XS050)

Project no.	318,001,660	**Sample ID**	XS050
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:57	**End time**	08:59
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 14, Cu 0, Zn 92, As 6			
Comments fine gravely silt brown sample taken			

Location

Photos

	ENVIROLAB For locations and contacts throughout Australia please RAMBOLL Project: 318001660 Sample ID: XS050 Depth: Surface Date: 20/6/23 Sampled by: SC EJ This bottle does not contain any preservative Fill container to the top with sample and chill.

SOIL SAMPLING (XS049)

Project no.	318,001,660	**Sample ID**	XS049
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:54	**End time**	08:55
Date	20/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0, Zn 0, As 0

Comments
fine gravely silt brown

Location

Photos

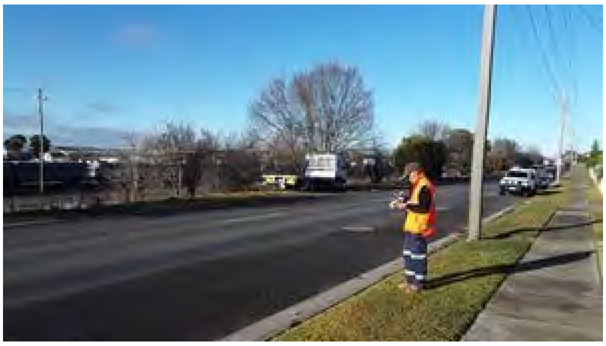
	
	

SOIL SAMPLING (XS047)

Project no.	318,001,660	**Sample ID**	XS047
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:49	**End time**	08:50
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0, Zn 41 , As 0			
Comments fine gravely silt brown			

Location

Photos

SOIL SAMPLING (XS046)

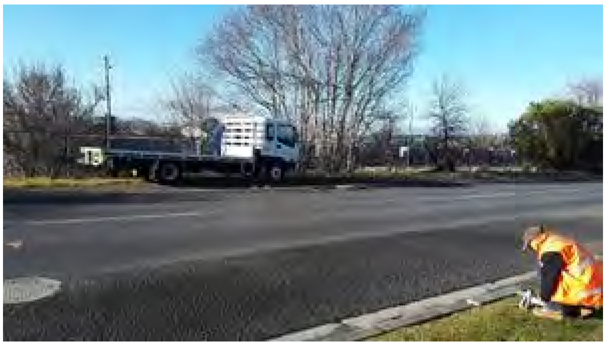
Project no.	318,001,660	**Sample ID**	XS046
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:46	**End time**	08:47
Date	20/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0, Zn 43 , As 0

Comments
fine gravely silt brown

Location

Photos

SOIL SAMPLING (XS045)

Project no.	318,001,660	**Sample ID**	XS045
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:44	**End time**	08:45
Date	20/06/2023	**Operator**	Other

Sample appearance

Pb 0, Cu 0, Zn 77 , As 0

Comments

silty sand brown

Location

Photos

SOIL SAMPLING (XS044)

Project no.	318,001,660	**Sample ID**	XS044
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:41	**End time**	08:42
Date	20/06/2023	**Operator**	Other

Sample appearance

Pb 0, Cu 0, Zn 0 , As 0

Comments

Gravely silty sand brown medium to large sized gravel

Location

Photos

SOIL SAMPLING (XS043)

Project no.	318,001,660	**Sample ID**	XS043
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:39	**End time**	08:41
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0, Zn 0 , As 0			
Comments Gravely silty sand brown medium sized gravel			

Location

Photos

SOIL SAMPLING (XS042)

Project no.	318,001,660	**Sample ID**	XS042
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:36	**End time**	08:38
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0, Zn 0 , As 0			
Comments Gravely silty sand brown medium sized gravel			

Location

Photos

SOIL SAMPLING (XS041)

Project no.	318,001,660	**Sample ID**	XS041
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:33	**End time**	08:35
Date	20/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 88, Zn0 , As 0

Comments
Gravely silty sand brown

Location

Photos

SOIL SAMPLING (XS040)

Project no.	318,001,660	**Sample ID**	XS040
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:16	**End time**	08:18
Date	20/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0, Zn 31 , As 0

Comments
Gravely silty sand brown

Location

Photos

SOIL SAMPLING (XS039)

Project no.	318,001,660	**Sample ID**	XS039
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:14	**End time**	08:15
Date	20/06/2023	**Operator**	Other

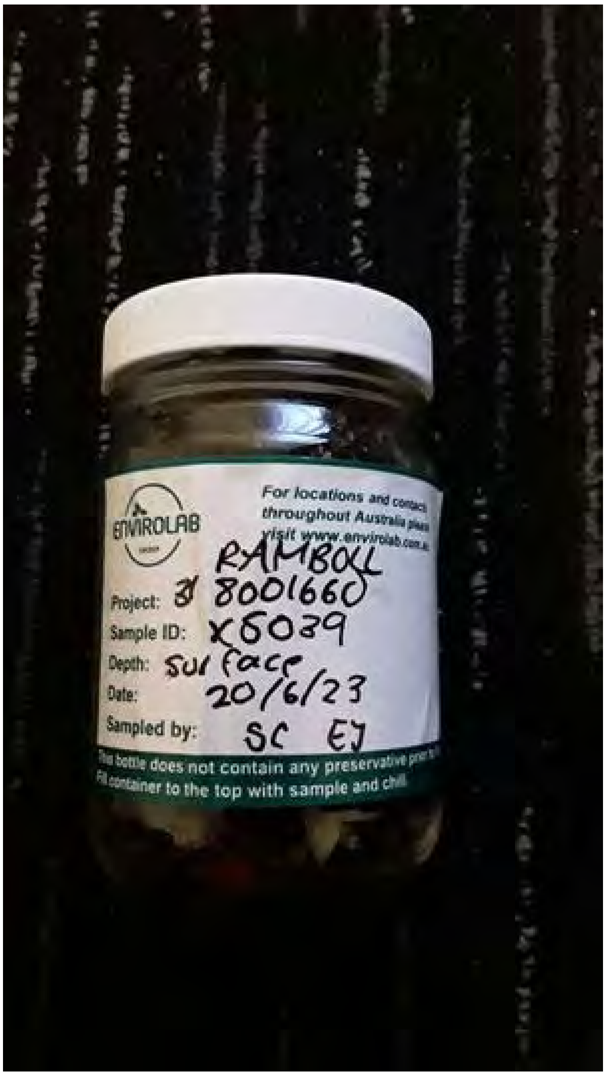
Sample appearance
Pb 21, Cu 44, Zn62 , As 10

Comments
Gravely silty sand brown sample taken

Location

Photos


ENVIROLAB
RAMBOLL
Project: 8001660
Sample ID: X5039
Depth: surface
Date: 20/6/23
Sampled by: SC EJ
This bottle does not contain any preservative
container to the top with sample and chill

SOIL SAMPLING (XS038)

Project no.	318,001,660	**Sample ID**	XS038
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:12	**End time**	08:13
Date	20/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 39, Zn 31 , As 0

Comments
Gravely silt brown

Location

Photos

SOIL SAMPLING (XS037)

Project no.	318,001,660	**Sample ID**	XS037
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:10	**End time**	08:11
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 49, Zn 0 , As 0			
Comments Gravely silty sand brown			

Location

Photos

SOIL SAMPLING (XS036)

Project no.	318,001,660	**Sample ID**	XS036
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:07	**End time**	08:08
Date	20/06/2023	**Operator**	Other

Sample appearance Pb 0, Cu 0, Zn 0 , As 0
Comments Gravely silty sand brown

Location

Photos

SOIL SAMPLING (XS035)

Project no.	318,001,660	**Sample ID**	XS035
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:05	**End time**	08:06
Date	20/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0, Zn 19 , As 0

Comments
Gravely silty sand brown

Location

Photos

SOIL SAMPLING (XS034)

Project no.	318,001,660	**Sample ID**	XS034
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:02	**End time**	08:03
Date	20/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0, Zn 28 , As 0

Comments
Gravely silt grey brown colour

Location

Photos

SOIL SAMPLING (XS033)

Project no.	318,001,660	**Sample ID**	XS033
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	08:00	**End time**	08:01
Date	20/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0, Zn 0 , As 0

Comments
Gravely silty sand medium sized stones

Location

Photos

SOIL SAMPLING (XS032)

Project no.	318,001,660	**Sample ID**	XS032
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	07:58	**End time**	08:00
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0, Zn 0 , As 0			
Comments Gravely silty sand			

Location

Photos

SOIL SAMPLING (XS031)

Project no.	318,001,660	**Sample ID**	XS031
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	07:55	**End time**	07:57
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0, Zn 142 , As 0			
Comments Brown fine top soil silt			

Location

Photos

SOIL SAMPLING (XS030)

Project no.	318,001,660	**Sample ID**	XS030
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	07:41	**End time**	07:43
Date	20/06/2023	**Operator**	Other

Sample appearance

Pb 12, Cu39, Zn 109 , As 0

Comments

Brown fine top soil silt sample taken

Location

Photos


ENVIROLAB
For locations and contacts
throughout Australia
visit www.envirolab
RAMBOLL
Project: 318001660
Sample ID: X5030
Depth: surface
Date: 20/6/23
Sampled by: SC EJ
This bottle does not contain any preservative
Fill container to the top with sample and chill.

SOIL SAMPLING (XS029)

Project no.	318,001,660	**Sample ID**	XS029
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	07:39	**End time**	07:40
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0, Zn 40 , As 0			
Comments Brown fine top soil silt			

Location

Photos

SOIL SAMPLING (XS028)

Project no.	318,001,660	**Sample ID**	XS028
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	07:35	**End time**	07:37
Date	20/06/2023	**Operator**	Other

Sample appearance

Pb 24, Cu 0, Zn 138 , As 0

Comments

Brown fine top soil silt

Location

Photos

SOIL SAMPLING (XS027)

Project no.	318,001,660	**Sample ID**	XS027
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	07:31	**End time**	07:33
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 118, Zn 0 , As 0			
Comments Brown fine top soil silt			

Location

Photos

SOIL SAMPLING (XS026)

Project no.	318,001,660	**Sample ID**	XS026
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	07:29	**End time**	07:31
Date	20/06/2023	**Operator**	Other

Sample appearance

Pb 32, Cu 0, Zn 0 , As 0

Comments

Brown fine top soil silt

Location

Photos

SOIL SAMPLING (XS025)

Project no.	318,001,660	**Sample ID**	XS025
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	07:26	**End time**	07:28
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0, Zn 96 , As 0			
Comments Brown fine top soil silt			

Location

Photos

SOIL SAMPLING (XS024)

Project no.	318,001,660	**Sample ID**	XS024
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	07:23	**End time**	07:25
Date	20/06/2023	**Operator**	Other
Sample appearance Pb 35, Cu 0, Zn 136 , As 0			
Comments Brown fine top soil silt			

Location

Photos

SOIL SAMPLING (XS023)

Project no.	318,001,660	**Sample ID**	XS023
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	07:20	**End time**	07:23
Date	20/06/2023	**Operator**	Other

Sample appearance
Pb 24, Cu 0, Zn 92 , As 0

Comments
Brown fine top soil silt

Location

Photos

SOIL SAMPLING (XS022)

Project no.	318,001,660	**Sample ID**	XS022
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	16:32	**End time**	16:34
Date	19/06/2023	**Operator**	Other

Sample appearance

Pb 19, Cu 50, Zn 180, As 0

Comments

Brown silt sample taken

Location

Photos


ENVIROLAB
RAMBOLL
Project: 318001660
Sample ID: XS022
Depth: Surface
Date: 19/6/23
Sampled by: SC EJ

SOIL SAMPLING (XS021)

Project no.	318,001,660	**Sample ID**	XS021
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	16:30	**End time**	16:32
Date	19/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 48, Zn 72 , As 10

Comments
Brown gravely silt

Location

Photos

SOIL SAMPLING (XS020)

Project no.	318,001,660	**Sample ID**	XS020
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	16:28	**End time**	16:30
Date	19/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 26, Zn 102 , As 4			
Comments Brown gravely silt			

Location

Photos

SOIL SAMPLING (XS019)

Project no.	318,001,660	**Sample ID**	XS019
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	16:25	**End time**	16:27
Date	19/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0, Zn 0 , As0

Comments
Brown gravely silt

Location

Photos

SOIL SAMPLING (XS018)

Project no.	318,001,660	**Sample ID**	XS018
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	16:24	**End time**	16:26
Date	19/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0, Zn 0 , As0			
Comments Brown gravely silt			

Location

Photos

SOIL SAMPLING (XS017)

Project no.	318,001,660	**Sample ID**	XS017
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	16:23	**End time**	16:24
Date	19/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 45, Zn 94 , As0

Comments
Brown gravely silt

Location

Photos

SOIL SAMPLING (XS016)

Project no.	318,001,660	**Sample ID**	XS016
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	16:18	**End time**	16:19
Date	19/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0, Zn 284 , As0

Comments
Brown gravely silt

Location

Photos

SOIL SAMPLING (XS015)

Project no.	318,001,660	**Sample ID**	XS015
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	16:15	**End time**	16:16
Date	19/06/2023	**Operator**	Other

Sample appearance
Pb 10, Cu 33, Zn 212 , As 0

Comments
Brown silt

Location

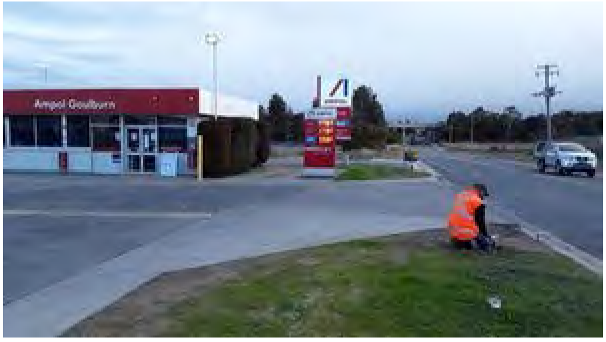
Photos

SOIL SAMPLING (XS014)

Project no.	318,001,660	**Sample ID**	XS014
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	16:13	**End time**	16:14
Date	19/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0, Zn 120, As0			
Comments Brown silt			

Location

Photos

	 Ampol Goulburn
	

SOIL SAMPLING (XS013)

Project no.	318,001,660	**Sample ID**	XS013
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	16:10	**End time**	16:15
Date	19/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0, Zn368, As 0

Comments
Brown silt

Location

Photos

SOIL SAMPLING (XS012)

Project no.	318,001,660	**Sample ID**	XS012
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	16:06	**End time**	16:09
Date	19/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0, Zn 64, As 15			
Comments Brown silt			

Location

Photos

SOIL SAMPLING (XS011)

Project no.	318,001,660	**Sample ID**	XS011
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	15:40	**End time**	15:42
Date	19/06/2023	**Operator**	Jill Cowburn, Other

Sample appearance Pb 0, Cu 58, Zn 0, As 0
Comments Brown gravely silt

Location

Photos

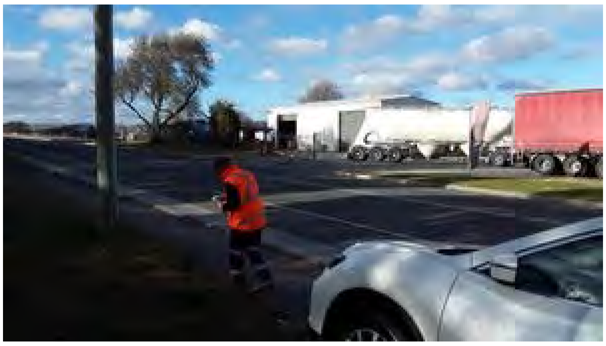
	
	

SOIL SAMPLING (XS010)

Project no.	318,001,660	**Sample ID**	XS010
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	15:13	**End time**	15:15
Date	19/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0, Zn 0, As 0			
Comments Brown gravely silt			

Location

Photos

SOIL SAMPLING (XS009)

Project no.	318,001,660	**Sample ID**	XS009
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	15:07	**End time**	15:09
Date	19/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0, Zn 0, As 0			
Comments Brown gravely silt			

Location

Photos

SOIL SAMPLING (XS008)

Project no.	318,001,660	**Sample ID**	XS008
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	15:05	**End time**	15:07
Date	19/06/2023	**Operator**	Other

Sample appearance
Pb 13, Cu 0, Zn 76, As 0

Comments
Brown gravely silt, sample taken XS008

Location

Photos


ENVIROLAB
RAMBOLL
Project: 318001660
Sample ID: XS008
Depth: Surface
Date: 19/6/23
Sampled by: SC EJ

SOIL SAMPLING (XS007)

Project no.	318,001,660	**Sample ID**	XS007
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	15:02	**End time**	15:04
Date	19/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0, Zn 0, As 16			
Comments Brown silt			

Location

Photos

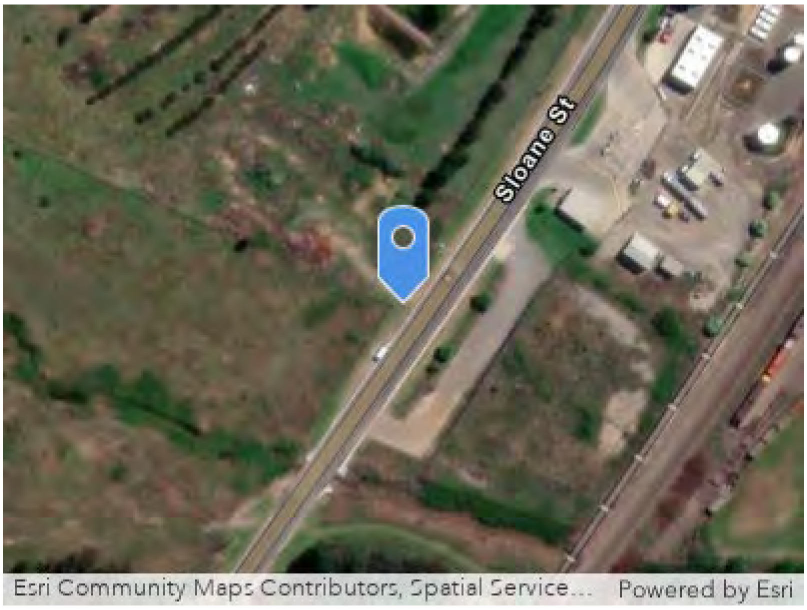
SOIL SAMPLING (XS006)

Project no.	318,001,660	**Sample ID**	XS006
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	14:59	**End time**	15:01
Date	19/06/2023	**Operator**	Other

Sample appearance
Pb 0, Cu 0, Zn 0, As 0

Comments
Light brown silt with gravel

Location



Photos

SOIL SAMPLING (XS005)

Project no.	318,001,660	**Sample ID**	XS005
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	14:56	**End time**	14:58
Date	19/06/2023	**Operator**	Other

Sample appearance
Pb 12, Cu 0, Zn 18, As 0

Comments
Light brown silt

Location

Photos

SOIL SAMPLING (XS004)

Project no.	318,001,660	**Sample ID**	XS004
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	14:53	**End time**	14:55
Date	19/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0, Zn41 , As 0			
Comments Brown silt, gravel			

Location

Photos

SOIL SAMPLING (XS003)

Project no.	318,001,660	**Sample ID**	XS003
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	14:50	**End time**	14:52
Date	19/06/2023	**Operator**	Other
Sample appearance Pb 0, Cu 0, Zn 51, As 9			
Comments Brown silt			

Location

Photos

SOIL SAMPLING (XS002)

Project no.	318,001,660	**Sample ID**	XS002
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	14:46	**End time**	14:48
Date	19/06/2023	**Operator**	Other

Sample appearance Pb 0, Cu 0, Zn 0, As 0
Comments Brown silt

Location

Photos

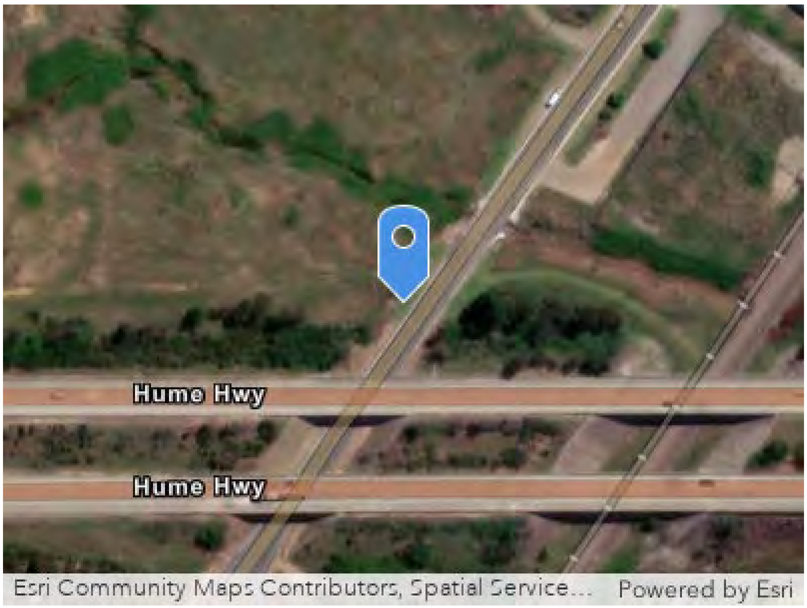
	

SOIL SAMPLING (XS001)

Project no.	318,001,660	**Sample ID**	XS001
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	14:43	**End time**	14:45
Date	19/06/2023	**Operator**	Other
Sample appearance Pb0, Cu 0, Zn 0, As 0			
Comments Brown silty sand			

Location



Photos

SOIL SAMPLING (Test001)

Project no.	318,001,660	**Sample ID**	Test001
Project name	Goulburn Wheatyard Offsite Lead Delineation	**Sample type**	XRF
Start time	14:31	**End time**	
Date	19/06/2023	**Operator**	Other

Sample appearance
Pb 300, Cu 45, Zn 478, As 43

Comments
Brown silty sand

Location

Photos

Appendix 7
Laboratory Reports

1/3

CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

☐ Sydney Laboratory
Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl., Murarrie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Ramboll	Project №	318001660	Project Manager	Rachel Condon
Address	Unit 18, 50 Glebe Road, The Junction, NSW 2291	Project Name	Goulburn Wheat Yards	EDD Format (ESdat, EQuIS, Custom)	EQuIS / Excel / PDF
Contact Name	Steve Cadman	Sampler(s)	S Cadman	Handed over by	S Cadman
Phone №	0423583538	Email for Invoice	rcondon@ramboll.com	Email for Results	rcondon@ramboll.com
Special Directions					
Purchase Order	318001660				
Quote ID №					

Analyses: Note: Where metals are requested, please specify "Total" or "Filtered". If SUITE code must be used to attract SUITE pricing.

Containers: 1L Plastic; 250mL Plastic; 125mL Plastic; 200mL Amber Glass; 40mL VOA vial; 500mL PFAS Bottle; Jar (Glass or HDPE); Other (Asbestos AS4964, WA Guidelines)

Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)
Overnight (9am)*
☐ 1 Day* 2 Day*
☐ 3 Day* ☐ 5 Day
☐ Other ( ) ☐ *Surcharges apply

№	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Metals (Pb, Zn, Cu, As)	Sample Comments / Dangerous Goods Hazard Warning
1	XS008	19/06/23	S	X	
2	XS022	19/06/23	S	X	
3	XS030	20/06/23	S	X	
4	XS039	20/06/23	S	X	
5	XS050	20/06/23	S	X	
6	XS060	20/06/23	S	X	
7	XS070	20/06/23	S	X	
8	XS080	20/06/23	S	X	
9	XS090	20/06/23	S	X	
10	XS100	20/06/23	S	X	
	Total Counts			10	

Method of Shipment	Courier (#)	Hand Delivered	Postal	Name: Steve Cadman	Signature: Steve Cadman	Date: 15 /02 /2023	Time: 9 : 30	
Eurofins | mgt Laboratory Use Only	Received By: Jacdyn Storey	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date: 23/6/23	Time: 10:56	Temperature: 4.7		
	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date: __/__/__	Time: __:__	Report №: 1002401		

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

2/3

CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory	Brisbane Laboratory	Perth Laboratory	Melbourne Laboratory
Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066	Unit 1, 21 Smallwood Pl., Murarrie, QLD 4172	Unit 2, 91 Leach Highway, Kewdale WA 6105	2 Kingston Town Close, Oakleigh, VIC 3166
02 9900 8400 EnviroSampleNSW@eurofins.com	07 3902 4600 EnviroSampleQLD@eurofins.com	08 9251 9600 EnviroSampleWA@eurofins.com	03 8564 5000 EnviroSampleVic@eurofins.com

Company	Ramboll	Project №	318001660	Project Manager	Rachel Condon	Sampler(s)	S Cadman
Address	Unit 18, 50 Glebe Road, The Junction, NSW 2291	Project Name	Goulburn Wheat Yards	EDD Format (ESdat, EQuIS, Custom)	EQuIS / Excel / PDF	Handed over by	S Cadman
Contact Name	Steve Cadman					Email for Invoice	rcondon@ramboll.com
Phone №	0423583538					Email for Results	rcondon@ramboll.com
Special Directions							
Purchase Order	318001660						
Quote ID №							

Containers: 1L Plastic; 250mL Plastic; 125mL Plastic; 200mL Amber Glass; 40mL VOA vial; 500mL PFAS Bottle; Jar (Glass or HDPE); Other (Asbestos AS4964, WA Guidelines)

Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)

- ☐ Overnight (9am)*
- ☐ 1 Day*
- ☐ 2 Day*
- ☐ 3 Day*
- ☐ 5 Day
- ☐ Other ( )
- *Surcharges apply

Analyses: Metals (Pb, Zn, Cu, As)

№	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Metals (Pb, Zn, Cu, As)	Sample Comments / Dangerous Goods Hazard Warning
1	XS110	20/06/23	S	X	
2	XS120	20/06/23	S	X	
3	XS130	20/06/23	S	X	
4	XS140	20/06/23	S	X	
5	XS150	21/06/23	S	X	
6	XS160	21/06/23	S	X	
7	XS170	21/06/23	S	X	
8	XS179	21/06/23	S	X	
9	XS190	21/06/23	S	X	
10	XS200	21/06/23	S	X	
			Total Counts	10	

Method of Shipment	☐ Courier (#)	☐ Hand Delivered	☐ Postal	Name	Steve Cadman	Signature	Steve Cadman	Date	15 /02 /2023	Time 9 : 30
Eurofins | mgt Laboratory Use Only	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	[signature]	Date	23/6/23	Time	10:46	Temperature 4.7
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date	__/__/__	Time	__:__	Report № 1002861

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

☐ Sydney Laboratory
Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl., Murarrie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Ramboll	Project №	318001660	Project Manager	Rachel Condon	Sampler(s)	S Cadman
Address	Unit 18, 50 Glebe Road, The Junction, NSW 2291	Project Name	Goulburn Wheat Yards	EDD Format (ESdat, EQuIS, Custom)	EQuIS / Excel / PDF	Handed over by	S Cadman
Contact Name	Steve Cadman					Email for Invoice	rcondon@ramboll.com
Phone №	0423583538					Email for Results	rcondon@ramboll.com
Special Directions							
Purchase Order	318001660						
Quote ID №							

Analyses (Note: Where metals are requested, please specify "Total" or "Filtered" \| SUITE code must be used to attract SUITE pricing.)

Containers: 1L Plastic; 250mL Plastic; 125mL Plastic; 200mL Amber Glass; 40mL VOA vial; 500mL PFAS Bottle; Jar (Glass or HDPE); Other (Asbestos AS4964, WA Guidelines)

Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)
Overnight (9am)*
☐ 1 Day* ☐ 2 Day*
☐ 3 Day* ☐ 5 Day
☐ Other ( ) *Surcharges apply

№	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Metals (Pb, Zn, Cu, As)	Total Metals (Pb, Cu, Zn, As)	Sample Comments / Dangerous Goods Hazard Warning
1	XS210	21/06/23	S	X		
2	XS223	21/06/23	S	X		
3	D001	21/06/23	S	X		
4	D002	21/06/23	S	X		
5	T001	21/06/23	S	X		Please send to ALS for analysis
6	T002	21/06/23	S	X		Please send to ALS for analysis
7	Rinsate_20/06/06/23	20/06/23	W		X	
8	Rinsate_21/06/06/23	21/06/23	W		X	
9						
10						
	Total Counts			6	2	

Method of Shipment	Courier (#)	Hand Delivered	Postal	Name	Steve Cadman	Signature	Steve Cadman	Date	15 /02 / 2023
								Time	9 : 30
Eurofins | mgt Laboratory Use Only	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date	23/6/23	Time	10:46
								Temperature	4.7
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date	__/__/__	Time	__:__
								Report №	1002461

Sample Receipt Advice

Company name:	Ramboll Australia Pty Ltd
Contact name:	Rachel Condon
Project name:	GOULBURN WHEAT YARDS
Project ID:	318001660
Turnaround time:	5 Day
Date/Time received	Jun 23, 2023 10:46 AM
Eurofins reference	1002461

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Andrew Black on phone : (+61) 2 9900 8490 or by email: AndrewBlack@eurofins.com

Results will be delivered electronically via email to Rachel Condon - rcondon@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 4551
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: +64 3 343 5201
IANZ# 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: GOULBURN WHEAT YARDS
Project ID: 318001660

Order No.: 318001660
Report #: 1002461
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Jun 23, 2023 10:46 AM
Due: Jun 30, 2023
Priority: 5 Day
Contact Name: Rachel Condon

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Arsenic	Copper	Lead	Zinc	Moisture Set
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X
External Laboratory										
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**					
1	XS008	Jun 19, 2023		Soil	N23-Jn0060204	X	X	X	X	X
2	XS022	Jun 19, 2023		Soil	N23-Jn0060205	X	X	X	X	X
3	XS030	Jun 20, 2023		Soil	N23-Jn0060206	X	X	X	X	X
4	XS039	Jun 20, 2023		Soil	N23-Jn0060207	X	X	X	X	X
5	XS050	Jun 20, 2023		Soil	N23-Jn0060208	X	X	X	X	X
6	XS060	Jun 20, 2023		Soil	N23-Jn0060209	X	X	X	X	X
7	XS070	Jun 20, 2023		Soil	N23-Jn0060210	X	X	X	X	X
8	XS080	Jun 20, 2023		Soil	N23-Jn0060211	X	X	X	X	X
9	XS090	Jun 20, 2023		Soil	N23-Jn0060212	X	X	X	X	X
10	XS100	Jun 20, 2023		Soil	N23-Jn0060213	X	X	X	X	X
11	XS110	Jun 20, 2023		Soil	N23-Jn0060214	X	X	X	X	X
12	XS120	Jun 20, 2023		Soil	N23-Jn0060215	X	X	X	X	X
13	XS130	Jun 20, 2023		Soil	N23-Jn0060216	X	X	X	X	X

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne 6 Monterey Road Dandenong South VIC 3175 Tel: +61 3 8564 5000 NATA# 1261 Site# 1254
Geelong 19/8 Lewalan Street Grovedale VIC 3216 Tel: +61 3 8564 5000 NATA# 1261 Site# 25403
Sydney 179 Magowar Road Girraween NSW 2145 Tel: +61 2 9900 8400 NATA# 1261 Site# 18217
Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 Tel: +61 2 6113 8091 NATA# 1261 Site# 25466
Brisbane 1/21 Smallwood Place Murarrie QLD 4172 Tel: +61 7 3902 4600 NATA# 1261 Site# 20794
Newcastle 1/2 Frost Drive Mayfield West NSW 2304 Tel: +61 2 4968 8448 NATA# 1261 Site# 25079 & 25289

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Perth 46-48 Banksia Road Welshpool WA 6106 Tel: +61 8 6253 4444 NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland 35 O'Rorke Road Penrose, Auckland 1061 Tel: +64 9 526 4551 IANZ# 1327
Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Tel: +64 3 343 5201 IANZ# 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.: 318001660
Report #: 1002461
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Jun 23, 2023 10:46 AM
Due: Jun 30, 2023
Priority: 5 Day
Contact Name: Rachel Condon

Project Name: GOULBURN WHEAT YARDS
Project ID: 318001660

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Arsenic	Copper	Lead	Zinc	Moisture Set
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X
14	XS140	Jun 20, 2023		Soil	N23-Jn0060217	X	X	X	X	X
15	XS150	Jun 21, 2023		Soil	N23-Jn0060218	X	X	X	X	X
16	XS160	Jun 21, 2023		Soil	N23-Jn0060219	X	X	X	X	X
17	XS170	Jun 21, 2023		Soil	N23-Jn0060220	X	X	X	X	X
18	XS179	Jun 21, 2023		Soil	N23-Jn0060221	X	X	X	X	X
19	XS190	Jun 21, 2023		Soil	N23-Jn0060222	X	X	X	X	X
20	XS200	Jun 21, 2023		Soil	N23-Jn0060223	X	X	X	X	X
21	XS210	Jun 21, 2023		Soil	N23-Jn0060224	X	X	X	X	X
22	XS223	Jun 21, 2023		Soil	N23-Jn0060225	X	X	X	X	X
23	D001	Jun 21, 2023		Soil	N23-Jn0060226	X	X	X	X	X
24	D002	Jun 21, 2023		Soil	N23-Jn0060227	X	X	X	X	X
25	RINSATE_20/ 6/23	Jun 20, 2023		Water	N23-Jn0060228	X	X	X	X	
26	RINSATE_21/ 6/23	Jun 21, 2023		Water	N23-Jn0060229	X	X	X	X	
Test Counts						26	27	28	28	24

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Certificate of Analysis

Ramboll Australia Pty Ltd
Level 3/100 Pacific Highway
North Sydney
NSW 2060

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Rachel Condon**

Report **1002461-S**
Project name GOULBURN WHEAT YARDS
Project ID 318001660
Received Date Jun 23, 2023

Client Sample ID			**XS008**	**XS022**	**XS030**	**XS039**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**N23-Jn0060204**	**N23-Jn0060205**	**N23-Jn0060206**	**N23-Jn0060207**
Date Sampled			**Jun 19, 2023**	**Jun 19, 2023**	**Jun 20, 2023**	**Jun 20, 2023**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	15	6.7	3.5	4.4
Copper	5	mg/kg	25	29	18	22
Lead	5	mg/kg	25	19	31	26
Zinc	5	mg/kg	33	110	94	39
Sample Properties						
% Moisture	1	%	13	5.2	21	13

Client Sample ID			**XS050**	**XS060**	**XS070**	**XS080**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**N23-Jn0060208**	**N23-Jn0060209**	**N23-Jn0060210**	**N23-Jn0060211**
Date Sampled			**Jun 20, 2023**	**Jun 20, 2023**	**Jun 20, 2023**	**Jun 20, 2023**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	9.6	14	7.3	7.2
Copper	5	mg/kg	13	17	23	57
Lead	5	mg/kg	43	130	91	180
Zinc	5	mg/kg	95	56	160	540
Sample Properties						
% Moisture	1	%	24	13	34	29

Client Sample ID			**XS090**	**XS100**	**XS110**	**XS120**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**N23-Jn0060212**	**N23-Jn0060213**	**N23-Jn0060214**	**N23-Jn0060215**
Date Sampled			**Jun 20, 2023**	**Jun 20, 2023**	**Jun 20, 2023**	**Jun 20, 2023**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	3.2	4.5	2.7	5.2
Copper	5	mg/kg	28	25	56	16
Lead	5	mg/kg	130	150	22	55
Zinc	5	mg/kg	470	160	140	120
Sample Properties						
% Moisture	1	%	31	13	15	17

Client Sample ID			XS130	XS140	XS150	XS160
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Jn0060216	N23-Jn0060217	N23-Jn0060218	N23-Jn0060219
Date Sampled			Jun 20, 2023	Jun 20, 2023	Jun 21, 2023	Jun 21, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	3.1	3.8	8.9	4.6
Copper	5	mg/kg	13	21	67	18
Lead	5	mg/kg	41	20	68	18
Zinc	5	mg/kg	170	99	130	47
Sample Properties						
% Moisture	1	%	14	13	8.6	18

Client Sample ID			XS170	XS179	XS190	XS200
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Jn0060220	N23-Jn0060221	N23-Jn0060222	N23-Jn0060223
Date Sampled			Jun 21, 2023	Jun 21, 2023	Jun 21, 2023	Jun 21, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	3.1	4.9	11	12
Copper	5	mg/kg	15	28	24	27
Lead	5	mg/kg	28	81	61	54
Zinc	5	mg/kg	98	190	97	99
Sample Properties						
% Moisture	1	%	16	14	12	19

Client Sample ID			XS210	XS223	D001	D002
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Jn0060224	N23-Jn0060225	N23-Jn0060226	N23-Jn0060227
Date Sampled			Jun 21, 2023	Jun 21, 2023	Jun 21, 2023	Jun 21, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	11	6.9	6.9	5.6
Copper	5	mg/kg	27	17	24	39
Lead	5	mg/kg	29	22	56	16
Zinc	5	mg/kg	65	47	97	40
Sample Properties						
% Moisture	1	%	8.9	14	16	15

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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

Description	Testing Site	Extracted	Holding Time
Heavy Metals	Sydney	Jun 29, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	Jun 27, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
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1/2 Frost Drive
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Tel: +61 2 4968 8448
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Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 4551
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: +64 3 343 5201
IANZ# 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: GOULBURN WHEAT YARDS
Project ID: 318001660

Order No.: 318001660
Report #: 1002461
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Jun 23, 2023 10:46 AM
Due: Jun 30, 2023
Priority: 5 Day
Contact Name: Rachel Condon

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Arsenic	Copper	Lead	Zinc	Moisture Set
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X
External Laboratory										
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**					
1	XS008	Jun 19, 2023		Soil	N23-Jn0060204	X	X	X	X	X
2	XS022	Jun 19, 2023		Soil	N23-Jn0060205	X	X	X	X	X
3	XS030	Jun 20, 2023		Soil	N23-Jn0060206	X	X	X	X	X
4	XS039	Jun 20, 2023		Soil	N23-Jn0060207	X	X	X	X	X
5	XS050	Jun 20, 2023		Soil	N23-Jn0060208	X	X	X	X	X
6	XS060	Jun 20, 2023		Soil	N23-Jn0060209	X	X	X	X	X
7	XS070	Jun 20, 2023		Soil	N23-Jn0060210	X	X	X	X	X
8	XS080	Jun 20, 2023		Soil	N23-Jn0060211	X	X	X	X	X
9	XS090	Jun 20, 2023		Soil	N23-Jn0060212	X	X	X	X	X
10	XS100	Jun 20, 2023		Soil	N23-Jn0060213	X	X	X	X	X
11	XS110	Jun 20, 2023		Soil	N23-Jn0060214	X	X	X	X	X
12	XS120	Jun 20, 2023		Soil	N23-Jn0060215	X	X	X	X	X
13	XS130	Jun 20, 2023		Soil	N23-Jn0060216	X	X	X	X	X

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: GOULBURN WHEAT YARDS
Project ID: 318001660

Order No.: 318001660
Report #: 1002461
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Jun 23, 2023 10:46 AM
Due: Jun 30, 2023
Priority: 5 Day
Contact Name: Rachel Condon

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Arsenic	Copper	Lead	Zinc	Moisture Set
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X
14	XS140	Jun 20, 2023		Soil	N23-Jn0060217	X	X	X	X	X
15	XS150	Jun 21, 2023		Soil	N23-Jn0060218	X	X	X	X	X
16	XS160	Jun 21, 2023		Soil	N23-Jn0060219	X	X	X	X	X
17	XS170	Jun 21, 2023		Soil	N23-Jn0060220	X	X	X	X	X
18	XS179	Jun 21, 2023		Soil	N23-Jn0060221	X	X	X	X	X
19	XS190	Jun 21, 2023		Soil	N23-Jn0060222	X	X	X	X	X
20	XS200	Jun 21, 2023		Soil	N23-Jn0060223	X	X	X	X	X
21	XS210	Jun 21, 2023		Soil	N23-Jn0060224	X	X	X	X	X
22	XS223	Jun 21, 2023		Soil	N23-Jn0060225	X	X	X	X	X
23	D001	Jun 21, 2023		Soil	N23-Jn0060226	X	X	X	X	X
24	D002	Jun 21, 2023		Soil	N23-Jn0060227	X	X	X	X	X
25	RINSATE_20/6/23	Jun 20, 2023		Water	N23-Jn0060228	X	X	X	X	
26	RINSATE_21/6/23	Jun 21, 2023		Water	N23-Jn0060229	X	X	X	X	
Test Counts						26	26	26	26	24

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

µg/L: micrograms per litre

ppm: parts per million

ppb: parts per billion

%: Percentage

org/100 mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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

Results <10 times the LOR: No Limit

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

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

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

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Quality Control Results

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Heavy Metals									
Arsenic			mg/kg	< 2			2	Pass	
Copper			mg/kg	< 5			5	Pass	
Lead			mg/kg	< 5			5	Pass	
Zinc			mg/kg	< 5			5	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	117			80-120	Pass	
Copper			%	114			80-120	Pass	
Lead			%	117			80-120	Pass	
Zinc			%	108			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	N23-Jn0060204	CP	%	75			75-125	Pass	
Lead	N23-Jn0060204	CP	%	82			75-125	Pass	
Zinc	N23-Jn0060204	CP	%	86			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	N23-Jn0060225	CP	%	95			75-125	Pass	
Copper	N23-Jn0060225	CP	%	86			75-125	Pass	
Lead	N23-Jn0060225	CP	%	95			75-125	Pass	
Zinc	N23-Jn0060225	CP	%	76			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	N23-Jn0060205	CP	%	5.2	7.0	29	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	N23-Jn0060213	CP	mg/kg	4.5	4.8	7.5	30%	Pass	
Copper	N23-Jn0060213	CP	mg/kg	25	26	1.5	30%	Pass	
Lead	N23-Jn0060213	CP	mg/kg	150	140	3.5	30%	Pass	
Zinc	N23-Jn0060213	CP	mg/kg	160	160	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	N23-Jn0060223	CP	mg/kg	12	9.7	23	30%	Pass	
Copper	N23-Jn0060223	CP	mg/kg	27	30	9.3	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	N23-Jn0060225	CP	%	14	15	6.1	30%	Pass	

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Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Adam Bateup	Analytical Services Manager
Mickael Ros	Senior Analyst-Metal

Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

eurofins Environment Testing

Certificate of Analysis

Ramboll Australia Pty Ltd
Level 3/100 Pacific Highway
North Sydney
NSW 2060

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Rachel Condon**

Report	**1002461-W**
Project name	GOULBURN WHEAT YARDS
Project ID	318001660
Received Date	Jun 23, 2023

Client Sample ID			**RINSATE_20/6/23**	**RINSATE_21/6/23**
Sample Matrix			**Water**	**Water**
Eurofins Sample No.			**N23-Jn0060228**	**N23-Jn0060229**
Date Sampled			**Jun 20, 2023**	**Jun 21, 2023**
Test/Reference	LOR	Unit		
Heavy Metals				
Arsenic	0.001	mg/L	< 0.001	< 0.001
Copper	0.001	mg/L	0.002	< 0.001
Lead	0.001	mg/L	0.005	0.002
Zinc	0.005	mg/L	0.023	0.009

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Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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

Description	Testing Site	Extracted	Holding Time
Heavy Metals	Sydney	Jun 29, 2023	28 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: GOULBURN WHEAT YARDS
Project ID: 318001660

Order No.: 318001660
Report #: 1002461
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Jun 23, 2023 10:46 AM
Due: Jun 30, 2023
Priority: 5 Day
Contact Name: Rachel Condon

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Arsenic	Copper	Lead	Zinc	Moisture Set
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X
External Laboratory										
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**					
1	XS008	Jun 19, 2023		Soil	N23-Jn0060204	X	X	X	X	X
2	XS022	Jun 19, 2023		Soil	N23-Jn0060205	X	X	X	X	X
3	XS030	Jun 20, 2023		Soil	N23-Jn0060206	X	X	X	X	X
4	XS039	Jun 20, 2023		Soil	N23-Jn0060207	X	X	X	X	X
5	XS050	Jun 20, 2023		Soil	N23-Jn0060208	X	X	X	X	X
6	XS060	Jun 20, 2023		Soil	N23-Jn0060209	X	X	X	X	X
7	XS070	Jun 20, 2023		Soil	N23-Jn0060210	X	X	X	X	X
8	XS080	Jun 20, 2023		Soil	N23-Jn0060211	X	X	X	X	X
9	XS090	Jun 20, 2023		Soil	N23-Jn0060212	X	X	X	X	X
10	XS100	Jun 20, 2023		Soil	N23-Jn0060213	X	X	X	X	X
11	XS110	Jun 20, 2023		Soil	N23-Jn0060214	X	X	X	X	X
12	XS120	Jun 20, 2023		Soil	N23-Jn0060215	X	X	X	X	X
13	XS130	Jun 20, 2023		Soil	N23-Jn0060216	X	X	X	X	X

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne 6 Monterey Road Dandenong South VIC 3175 Tel: +61 3 8564 5000 NATA# 1261 Site# 1254
Geelong 19/8 Lewalan Street Grovedale VIC 3216 Tel: +61 3 8564 5000 NATA# 1261 Site# 25403
Sydney 179 Magowar Road Girraween NSW 2145 Tel: +61 2 9900 8400 NATA# 1261 Site# 18217
Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 Tel: +61 2 6113 8091 NATA# 1261 Site# 25466
Brisbane 1/21 Smallwood Place Murarrie QLD 4172 Tel: +61 7 3902 4600 NATA# 1261 Site# 20794
Newcastle 1/2 Frost Drive Mayfield West NSW 2304 Tel: +61 2 4968 8448 NATA# 1261 Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth 46-48 Banksia Road Welshpool WA 6106 Tel: +61 8 6253 4444 NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland 35 O'Rorke Road Penrose, Auckland 1061 Tel: +64 9 526 4551 IANZ# 1327
Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 Tel: +64 3 343 5201 IANZ# 1290

Company Name:	Ramboll Australia Pty Ltd	**Order No.:**	318001660	**Received:**	Jun 23, 2023 10:46 AM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	**Report #:**	1002461	**Due:**	Jun 30, 2023
		Phone:	02 9954 8118	**Priority:**	5 Day
		Fax:	02 9954 8150	**Contact Name:**	Rachel Condon
Project Name:	GOULBURN WHEAT YARDS				
Project ID:	318001660				

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Arsenic	Copper	Lead	Zinc	Moisture Set
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17	XS170	Jun 21, 2023		Soil	N23-Jn0060220	X	X	X	X	X
18	XS179	Jun 21, 2023		Soil	N23-Jn0060221	X	X	X	X	X
19	XS190	Jun 21, 2023		Soil	N23-Jn0060222	X	X	X	X	X
20	XS200	Jun 21, 2023		Soil	N23-Jn0060223	X	X	X	X	X
21	XS210	Jun 21, 2023		Soil	N23-Jn0060224	X	X	X	X	X
22	XS223	Jun 21, 2023		Soil	N23-Jn0060225	X	X	X	X	X
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25	RINSATE_20/6/23	Jun 20, 2023		Water	N23-Jn0060228	X	X	X	X	
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Test Counts						26	26	26	26	24

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
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NOTE: pH duplicates are reported as a range not as RPD

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PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
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4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Heavy Metals									
Arsenic			mg/L	< 0.001			0.001	Pass	
Copper			mg/L	< 0.001			0.001	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	97			80-120	Pass	
Copper			%	91			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	R23-Jn0047198	NCP	%	98			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Copper	R23-Jn0047198	NCP	%	94			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	N23-Jn0060228	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	N23-Jn0060229	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	N23-Jn0060229	CP	mg/L	< 0.001	0.001	46	30%	Fail	Q15

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Adam Bateup	Analytical Services Manager
Fang Yee Tan	Senior Analyst-Metal

Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

☐ Sydney Laboratory
Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarrie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Ramboll	Project Nº	318001660	Project Manager	Rachel Condon
Address	Unit 18, 50 Glebe Road, The Junction, NSW 2291	Project Name	Goulburn Wheat Yards	EDD Format (ESdat, EQuIS, Custom)	EQuIS / Excel / PDF
Contact Name	Steve Cadman				
Phone Nº	0423583538				
Special Directions					
Purchase Order	318001660				
Quote ID Nº					

Sampler(s)	S Cadman
Handed over by	S Cadman
Email for Invoice	rcondon@ramboll.com
Email for Results	rcondon@ramboll.com

Analyses
Note: Where metals are requested, please specify "Total" or "Filtered"; SUITE code must be used to attract SUITE pricing.

Environmental Division
Sydney
Work Order Reference
ES2321678
Telephone : + 61-2-8784 8555

Nº	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Metals (Pb, Zn, Cu, As)	Total Metals (Pb, Cu, Zn, As)	Sample Comments / Dangerous Goods Hazard Warning
1	XS210	21/06/23	S	X		
2	XS223	21/06/23	S	X		
3	D001	21/06/23	S	X		
4	D002	21/06/23	S	X		
5	1 T001	21/06/23	S	X		Please send to ALS for analysis
6	2 T002	21/06/23	S	X		Please send to ALS for analysis
7	Rinsate_20/06/06/23	20/06/23	W		X	
8	Rinsate_21/06/06/23	21/06/23	W		X	
9						
10						
			Total Counts	6	2	

Containers: 1L Plastic; 250mL Plastic; 125mL Plastic; 200mL Amber Glass; 40mL VOA vial; 500mL PFAS Bottle; Jar (Glass or HDPE); Other (Asbestos AS4964, WA Guidelines)

Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)
Overnight (9am)*
☐ 1 Day*
2 Day*
☐ 3 Day*
☐ 5 Day
☐ Other ( )
*Surcharges apply

Method of Shipment	Courier (#)	Hand Delivered	Postal	Name	Steve Cadman	Signature	Steve Cadman	Date 15 /02 /2023	Time 9 : 30
Eurofins | mgt Laboratory Use Only	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date 23/6/23	Time 10:46	Temperature 4.7		
	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date / /	Time	Report Nº 1002461		

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

rec: Fax 29/6/23 2:39pm

CERTIFICATE OF ANALYSIS

Work Order	: **ES2321678**	Page	: 1 of 2
Client	: **RAMBOLL AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MS RACHEL CONDON	Contact	: Customer Services ES
Address	: EASTPOINT COMPLEX SUITE 19B, LEVEL 2 50 GLEBE ROAD THE JUNCTION NSW 2291	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: 318001660 Goulburn Wheat Yards	Date Samples Received	: 29-Jun-2023 14:30
Order number	: 318001660	Date Analysis Commenced	: 04-Jul-2023
C-O-C number	: ----	Issue Date	: 05-Jul-2023 15:39
Sampler	: STEVE CADMAN		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 2		
No. of samples analysed	: 2		

NATA

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Evie Sidarta	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

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

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

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

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

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

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	T01	T02	----	----	----
			Sampling date / time	21-Jun-2023 00:00	21-Jun-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2321678-001	ES2321678-002	--------	--------	--------
				Result	Result	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**17.0**	**16.4**	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	**9**	**7**	----	----	----
Copper	7440-50-8	5	mg/kg	**30**	**18**	----	----	----
Lead	7439-92-1	5	mg/kg	**58**	**24**	----	----	----
Zinc	7440-66-6	5	mg/kg	**113**	**44**	----	----	----

QUALITY CONTROL REPORT

Work Order	: **ES2321678**	Page	: 1 of 3
Client	: **RAMBOLL AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MS RACHEL CONDON	Contact	: Customer Services ES
Address	: EASTPOINT COMPLEX SUITE 19B, LEVEL 2 50 GLEBE ROAD THE JUNCTION NSW 2291	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: 318001660 Goulburn Wheat Yards	Date Samples Received	: 29-Jun-2023
Order number	: 318001660	Date Analysis Commenced	: 04-Jul-2023
C-O-C number	: ----	Issue Date	: 05-Jul-2023
Sampler	: STEVE CADMAN		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Evie Sidarta	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

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

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 5150291)									
ES2321582-001	Anonymous	EG005T: Arsenic	7440-38-2	5	mg/kg	8	11	25.2	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	30	27	12.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	42	31	31.2	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	32	22	39.6	No Limit
ES2321705-001	Anonymous	EG005T: Arsenic	7440-38-2	5	mg/kg	14	15	8.7	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	32	32	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	34	21	49.8	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5150293)									
ES2321582-003	Anonymous	EA055: Moisture Content	----	0.1	%	13.0	12.9	1.2	0% - 20%
ES2321706-001	Anonymous	EA055: Moisture Content	----	0.1	%	8.5	9.9	14.9	No Limit

Method Blank (MB) and Laboratory Control Sample (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 (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5150291)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	98.4	88.0	113
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	108	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	96.5	82.0	119
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	78.3	66.0	133

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5150291)							
ES2321705-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	105	70.0	130
		EG005T: Copper	7440-50-8	250 mg/kg	111	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	98.4	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	90.6	66.0	133

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2321678**	Page	: 1 of 4
Client	: **RAMBOLL AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MS RACHEL CONDON	Telephone	: +61-2-8784 8555
Project	: 318001660 Goulburn Wheat Yards	Date Samples Received	: 29-Jun-2023
Site	: ----	Issue Date	: 05-Jul-2023
Sampler	: STEVE CADMAN	No. of samples received	: 2
Order number	: 318001660	No. of samples analysed	: 2

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

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

Outliers : Analysis Holding Time Compliance

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

Outliers : Frequency of Quality Control Samples

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

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

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

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

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

Matrix: **SOIL**

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

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)								
T01,	T02	**21-Jun-2023**	**----**	----	----	**04-Jul-2023**	05-Jul-2023	✓
EG005(ED093)T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)								
T01,	T02	**21-Jun-2023**	**04-Jul-2023**	18-Dec-2023	✓	**04-Jul-2023**	18-Dec-2023	✓

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	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Total Metals by ICP-AES	EG005T	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Total Metals by ICP-AES	EG005T	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Total Metals by ICP-AES	EG005T	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	*Method*	*Matrix*	*Method Descriptions*
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
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 Schedule B(3)

Preparation Methods	*Method*	*Matrix*	*Method Descriptions*
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).

Appendix 8
Calibration Certificates

PAS

Certificate of Calibration

Serial Number:	77758	Model:	XL3t 950	Software:	8.4K.17	Date of Q.C.:	18-April-2023
Resolution:	Shaping 1 176.99	Escale:	Shaping 1 7.4	Source:	Tube	Inspector:	Shaun A
	Shaping 4 160.79		Shaping 4 7.4			Calibration type:	Empirical

60 second analysis time per filter, all switched on

Elements that are in BLUE BOLD should be detected

Elements not in BLUE BOLD need not be detected but record if present

NIST HIGH 2710	Certified	Low	High	Measured	Err	Pass	<LOD?
Ba	**707**	**507**	**978**	**614.98**	27.8	OK	
Cs	107	0	400	**65.92**	9.76	OK	
Te	NR	-300	300	**26.8**	19.29	OK	< LOD
Sb	38.4	-100	110	**34.46**	7.34	OK	
Sn	NR	-100	100	**18.59**	7.55	OK	
Cd	21.8	-10	50	**23.55**	5.41	OK	
Ag	35.3	0	60	**33.7**	3.99	OK	
Pd	NR	-70	70	**1.17**	5.58	OK	< LOD
Mo	19	0	30	**18.07**	2.02	OK	
Zr	NR			**125.26**	3.5		
Sr	**330**	**280**	**380**	**325.65**	4.74	OK	
U	25	10	40	**32.28**	5.36	OK	
Rb	***120***	**80**	**160**	**118.93**	3.65	OK	
Th	13	-80	80	**16.68**	8.9	OK	
Pb	**5532**	**5400**	**5832**	**5549.88**	42.32	OK	
Se	NR	-30	30	**2.84**	3.92	OK	< LOD
As	**626**	**510**	**750**	**721.9**	34.5	OK	
Hg	32.6	0	50	**20.6**	8.5	OK	
Au		-20	25	**5.2**	7.2	OK	< LOD
Zn	**6952**	**6700**	**7250**	**6800.3**	52.6	OK	
W	**93**	**0**	**400**	**144.1**	31.7	OK	
Cu	**2950**	**2700**	**3250**	**2921.5**	40.7	OK	
Ni	14.3	0	105	**71.95**	20.04	OK	
Co	10	-270	270	**-86.58**	65.86	OK	< LOD
Fe	**33800**	**30420**	**37180**	**35788.55**	227.19	OK	
Mn	**10100**	**9500**	**12000**	**9966.7**	143.9	OK	
Cr	39	-100	120	**32.63**	10.52	OK	
V	76.6	-200	300	**84.21**	17.27	OK	
Ti	2830	2260	3500	**2766.48**	57.94	OK	
Sc	8.7	-160	160	**41.50**	15.82	OK	
Ca	**12500**	**8000**	**17000**	**11092.7**	132.85	OK	
K	**21100**	**16100**	**26100**	**19823.6**	221.96	OK	
S	2400	-140000	140000	**4352.73**	330.88	OK	

SiO2 (Blank)	Expected**	Low	High	Measured	Err	Pass	<LOD?
Ba	**0**	-200	200	**-112.21**	18.34	OK	< LOD
Cs	**0**	-260	260	**-49.56**	7.05	OK	< LOD
Te	**0**	-220	220	**-54.96**	14.24	OK	< LOD
Sb	**0**	-120	80	**-12.73**	5.26	OK	< LOD
Sn	**0**	-120	70	**-11.33**	-11.33	OK	
Cd	**0**	-50	50	**-7.23**	3.82	OK	< LOD
Ag	**0**	-30	30	**-0.94**	2.55	OK	< LOD
Pd	**0**	-50	50	**-8.16**	4.09	OK	< LOD
Mo	**0**	-10	10	**0.12**	1.09	OK	< LOD
Zr	**0**	-10	10	**-2.72**	0.77	OK	< LOD
Sr	**0**	-10	10	**0.13**	0.55	OK	< LOD
U	**0**	-10	10	**0.3**	1.42	OK	< LOD
Rb	**<210**	-10	210	**-0.11**	0.58	OK	< LOD
Th	**0**	-10	10	**-0.45**	0.92	OK	< LOD
Pb	**0**	-10	10	**-10.98**	1.5	OK	< LOD
Se	**0**	-20	20	**-0.91**	1.15	OK	< LOD
As	**0**	-10	10	**-0.25**	1.24	OK	< LOD
Hg	**0**	-10	10	**-0.8**	3.08	OK	< LOD
Au	**0**	-10	10	**-0.84**	1.94	OK	< LOD
Zn	**0**	-10	10	**6.8**	2.83	OK	
W	**0**	-60	60	**-4.32**	11.54	OK	< LOD
Cu	**0**	-20	20	**-2.53**	5.57	OK	< LOD
Ni	**0**	-70	70	**8.46**	11.12	OK	< LOD
Co	**0**	-50	50	**-6.58**	7.65	OK	< LOD
Fe	**0**	-50	50	**-20.42**	14.45	OK	< LOD
Mn	**0**	-100	300	**-25.46**	19.68	OK	< LOD
Cr	**0**	-120	120	**-15.66**	4.65	OK	< LOD
V	**0**	-160	160	**3.9**	3.36	OK	< LOD
Ti	**0**	-700	700	**5.16**	7.77	OK	< LOD
Sc	**0**	-100	100	**0.05**	1.32	OK	< LOD
Ca	**0**	-2000	2000	**-18.3**	6.07	OK	< LOD
K	**0**	-3000	3000	**-82.14**	19.52	OK	< LOD
S	**0**	-140000	140000	**-46.55**	59.14	OK	< LOD

NIST LOW 2709	Certified	Low	High	Measured	Err	Pass	<LOD?
Ba	**968**	**638**	**1238**	**803.28**	25.74	OK	
Cs	5.3	-300	300	**25.08**	8.61	OK	
Te	NR	-300	300	**-1.77**	17.23	OK	< LOD
Sb	7.9	-90	100	**-2.78**	6.31	OK	< LOD
Sn	NR	-100	100	**-5.78**	6.51	OK	< LOD
Cd	0.38	-60	60	**1.64**	4.62	OK	< LOD
Ag	0.41	-40	40	**-3.14**	2.99	OK	< LOD
Pd	NR	-60	60	**-0.32**	5.02	OK	< LOD
Mo	2	-10	10	**3.63**	1.47	OK	
Zr	**160**	**120**	**200**	**156.64**	2.77	OK	
Sr	**231**	**180**	**300**	**223.33**	3.19	OK	
U	3	-80	80	**5.9**	3.22	OK	
Rb	***96***	**76**	**115**	**82.95**	2.34	OK	
Th	11	-80	80	**7.59**	1.75	OK	
Pb	18.9	0	35	**9.12**	2.85	OK	
Se	1.57	-30	30	**1.39**	1.61	OK	< LOD
As	17.7	0	35	**8.50**	2.47	OK	
Hg	1.4	-10	10	**-1.5**	4.2	OK	< LOD
Au		-15	15	**4.2**	2.7	OK	
Zn	**106**	**50**	**160**	**143.79**	7.16	OK	
W	2	-80	80	**27.95**	15.92	OK	
Cu	34.6	0	60	**37.91**	8.07	OK	
Ni	88	0	125	**100.67**	15.42	OK	
Co	13.4	-250	280	**109.51**	48.92	OK	
Fe	**35000**	**25000**	**35000**	**27894.04**	162.16	OK	
Mn	538	0	700	**470.0**	37.7	OK	
Cr	130	30	200	**140.6**	10.7	OK	
V	112	-300	400	**124.6**	17.6	OK	
Ti	**3420**	**2700**	**4400**	**3355.1**	59.1	OK	
Sc	NR	-250	250	**64.0**	18.9	OK	
Ca	**18900**	**13900**	**27000**	**19496.1**	156.8	OK	
K	**20300**	**15300**	**25300**	**18433.6**	199.1	OK	
S	890	-150000	150000	**554.7**	209.5	OK	

RCRA	Expected**	Low	High	Measured	Err	Pass	<LOD?
Ba				**715.04**	27.11		
Cs				**49.67**	9.3		
Te				**26.12**	18.6		
Sb	**0**	**0**	**0**	**13.96**	7.58		
Sn	0	0	0	**21.03**	8.46		
Cd	**500**	**400**	**600**	**494.32**	9.63	OK	
Ag	**500**	**400**	**600**	**522.21**	8.83	OK	
Pd				**25.59**	6.44		
Mo				**2.51**	1.63		
Zr				**244.7**	3.53		
Sr	NA			**244.81**	3.56		
U				**5.54**	3.37		
Rb	NA			**71.89**	2.38		
Th				**7.89**	2.99		
Pb	**500**	**400**	**600**	**532.31**	12.8	OK	
Se	**500**	**400**	**600**	**468.85**	8.06	OK	
As	**500**	**400**	**600**	**488.14**	12.59	OK	
Hg	NA			**7.71**	5.17		
Au				-8.54	7.69		
Zn	NA			**66.25**	5.92		
W				**11.56**	16.79		
Cu	NA			**35.8**	8.75		
Ni	NA			**75.11**	16.57		
Co	NA			**131.7**	53.46		
Fe	NA			**29326.57**	176.86		
Mn	NA			**656.66**	44.44		
Cr (variable)	**500**			**519.86**	13.17		
V				**75.63**	14.45		
Ti				**2503.81**	48.88		
Sc				**31.9**	16.61		
Ca				**16895.52**	140.35		
K				**18019.13**	187.91		
S				**1221.77**	212.94		

GBW 07411	Certified	Low	High	Measured	Err	Pass	<LOD?
Ba	**550**	**320**	**800**	**596.32**	27.57	OK	
Cs	9	-457	457	**45.94**	9.63	OK	
Te	NR	-300	300	**44.35**	19.39	OK	
Sb	9	-80	100	**14.17**	7.16	OK	
Sn	NR	-120	120	**66.67**	7.98	OK	
Cd	28	0	47	**29.37**	5.49	OK	
Ag	5	-35	47	**6.81**	3.5	OK	
Pd	NR	-60	60	**4.29**	5.65	OK	< LOD
Mo	2	-9	9	**5.94**	1.71	OK	
Zr	**192**	**25**	**359**	**182.17**	3.3	OK	
Sr	**130**	**95**	**159**	**129.97**	2.82	OK	
U	3	-19	19	**4.37**	3.88	OK	< LOD
Rb	**111**	**61**	**120**	**100.68**	2.95	OK	
Th	**13**	**-18**	**45**	**4.33**	5.85	OK	< LOD
Pb	**2700**	**2324**	**2900**	**2749.65**	27.44	OK	
Se	1	-10	15	**-1.36**	2.69	OK	< LOD
As	205	127	283	**208.64**	21.84	OK	
Hg	0	-10	50	**-7.30**	5.80	OK	< LOD
Au		-10	15	**3.10**	4.90	OK	< LOD
Zn	**3800**	**2711**	**4880**	**3664.70**	35.41	OK	
W	7	-184	184	**37.52**	23.31	OK	
Cu	**65**	**42**	**80**	**65.32**	10.43	OK	
Ni	24	-35	117	**102.84**	18.43	OK	
Co	12	-232	232	**-102.24**	76.82	OK	< LOD
Fe		**0**	**60000**	**58493.58**	264.26	OK	
Mn	9700	4561	10643	**9737.8**	131.4	OK	
Cr	60	-317	380	**56.4**	12.9	OK	
V	89	-325	380	**98.9**	21.9	OK	
Ti	**4100**	**3283**	**4917**	**4084.4**	75.9	OK	
Sc	11	-300	300	**74.4**	29.7	OK	
Ca		**0**	**365000**	**33026.4**	246.7	OK	
K		**0**	**25000**	**17861.5**	243.6	OK	
S		-16000	16000	**2291.5**	348.0	OK	

DL1a	Certified	Low	High	Measured	Err	Pass	<LOD?
Ba	ND			**242.14**	21.4		
Cs	ND			**2.69**	7.82		
Te	ND			**-15.12**	15.69		
Sb	ND			**-1.52**	**5.78**		
Sn	ND			**-6.84**	5.96		
Cd	ND			**-4.31**	4.17		
Ag	ND			**-0.91**	2.77		
Pd	ND			**-1.16**	4.57		
Mo	ND			**7.18**	1.46		
Zr	ND			**85.08**	1.95		
Sr	ND			**16.86**	1.01		
U	**116**	**93**	**140**	**114.9**	4.68	OK	
Rb	ND			**92.06**	2.56		
Th	**76**	**60**	**92**	**64.93**	2.90	OK	
Pb	ND			**52.15**	3.95		
Se	ND			**-0.55**	1.47		
As	ND			**4.41**	3.11		
Hg	ND			**0.4**	3.7		
Au	ND			**1.5**	2.5		
Zn	ND			**57.81**	4.74		
W	ND			**15.63**	13.60		
Cu	ND			**17.69**	6.76		
Ni	ND			**33.52**	12.81		
Co	ND			**66.57**	21.93		
Fe	**9000**			**5299.51**	67.47		
Mn	ND			**98.4**	25.5		
Cr	ND			**27.2**	5.9		
V	ND			**37.3**	7.9		
Ti	900			**894.4**	24.9		
Sc	ND			**-0.1**	5.4		
Ca	3000			**2684.6**	53.1		
K	2000			**22712.5**	155.6		
S	4000			**1082.7**	139.6		

PAS

Soil QC Sheet

Revision Date: September 2014

Certificate of Calibration

Serial Number:	**77758**	Model:	XL3t 950	Software:	8.4K.17	Date of Q.C.:	18-April-2023
Resolution:	Shaping 1 **176.99**	Escale:	Shaping 1 **7.4**	Source:	Tube	Inspector:	Shaun A
	Shaping 4 **160.79**		Shaping 4 **7.4**			Calibration type:	**Empirical**

60 second analysis time per filter, all switched on

Elements that are in BLUE BOLD should be detected

Elements not in BLUE BOLD need not be detected but record if present

TILL4	Certified	Low	High	Measured	Err	Pass	<LOD?
Ba	**395**	**195**	**610**	**456.04**	25.12	OK	
Cs	12	-300	300	**48.62**	8.99	OK	
Te	NR	-300	300	**37.38**	18.09	OK	
Sb	1	-100	100	**8.43**	6.62	OK	< LOD
Sn	NR	-100	100	**23.87**	7.05	OK	
Cd	NR	-70	70	**2.51**	4.79	OK	< LOD
Ag	NR	-50	50	**1.34**	3.17	OK	< LOD
Pd	NR	-60	60	**2.52**	5.25	OK	< LOD
Mo	16	0	30	**19.81**	1.86	OK	
Zr	385	185	585	**387.09**	4.06	OK	
Sr	**109**	**50**	**150**	**112.12**	2.39	OK	
U	5	**-20**	**20**	**4.06**	3.92	OK	< LOD
Rb	**161**	**100**	**210**	**148.29**	3.14	OK	
Th	17.4	-40	70	**42.42**	2.87	OK	
Pb	50	28	70	**42.29**	4.15	OK	
Se	NR	-15	15	**3.12**	1.95	OK	
As	111	80	140	**106.88**	4.95	OK	
Hg	NR	-15	15	**2.2**	5.2	OK	< LOD
Au		-10	10	**9.4**	3.3	OK	
Zn	70	45	95	**64.09**	6.08	OK	
W	**204**	**130**	**270**	**152.98**	19.29	OK	
Cu	**237**	**200**	**280**	**223.03**	11.91	OK	
Ni	17	-50	90	**61.23**	15.73	OK	
Co	8	-300	300	**155.95**	56.11	OK	
Fe	**39700**	**29700**	**49700**	**34486.33**	185.92	OK	
Mn	490	300	600	**444.4**	39.0	OK	
Cr	53	-50	150	**41.0**	9.8	OK	
V	67	-150	250	**90.8**	17.7	OK	
Ti	**4840**	**3870**	**5808**	**4532.1**	63.2	OK	
Sc	10	-150	150	**20.4**	12.8	OK	
Ca	NR			**7697.2**	111.4		
K	NR			**24906.3**	235.5		
S	800	-130000	130000	**447.1**	206.8	OK	

NIST2780	Certified	Low	High	Measured	Err	Pass	<LOD?
Ba	**993**	**844**	**1142**	**1009.55**	28.58	OK	
Cs	13	-10	100	**81.25**	9.53	OK	
Te		0	150	**69.61**	18.97	OK	
Sb	160	100	250	**160.7**	8.12	OK	
Sn		-20	100	**29.55**	7.43	OK	
Cd	12.1	5	30	**22.64**	5.22	OK	
Ag	27	0	120	**30.44**	3.81	OK	
Pd		-15	15	**0.5**	5.39	OK	< LOD
Mo	11	0	20	**12.46**	1.79	OK	
Zr	176	131	220	**174.99**	3.42	OK	
Sr	**217**	**195**	**239**	**231.21**	3.69	OK	
U	4	-20	20	**4.63**	4.71	OK	< LOD
Rb	175	140	210	**169.95**	3.76	OK	
Th	12	0	55	**19.03**	7.89	OK	
Pb	**5770**	**4904**	**6635**	**5165.49**	37.4	OK	
Se	5	-10	10	**6.02**	3.44	OK	
As	48.8	0	90	**15.36**	28.77	OK	< LOD
Hg		-15	15	**-2.7**	6.1	OK	< LOD
Au		-20	20	**6.0**	6.1	OK	< LOD
Zn	**2570**	**1800**	**3340**	**2050.62**	26.56	OK	
W		-100	100	**64.05**	21.94	OK	
Cu	**215.5**	**151**	**280**	**183.34**	12.57	OK	
Ni		-100	100	**80.05**	17.84	OK	
Co		-200	200	**100.76**	51.72	OK	
Fe	**27840**	**22272**	**33408**	**24834.28**	170.78	OK	
Mn	**462**	**415**	**508**	**452.6**	41.9	OK	
Cr		0	70	**35.2**	9.1	OK	
V	268	150	350	**236.0**	20.3	OK	
Ti	**6990**	**6290**	**7689**	**6388.0**	70.7	OK	
Sc	23	3	33	**12.1**	7.3	OK	
Ca	1950	1000	3000	**1751.7**	71.8	OK	
K	**33800**	**30420**	**37180**	**32774.4**	249.5	OK	
S	**12630**	**5000**	**15000**	**10363.7**	400.1	OK	

This certificate is issued in accordance with Thermo Fisher Scientific factory specifications.
The measurements were found to be within specification limits at the time of calibration.
This certificate is valid for 2 years from the date of calibration.

Standards are traceable to National Institute of Standards & Technology (NIST) standards.
**** - Not Certified**

Signed:

Paul Martin
Director

Appendix 9
NSW EPA licence under the *Radiation Control Act 1990*

Radiation Control Act 1990

Radiation User Licence

12/07/2023

Mr. STEPHEN CADMAN
2 NORTH PARADE
BLACKALLS PARK NSW 2283

Contact: STEPHEN CADMAN
Email: scadman@ramboll.com

LICENCE DETAILS

Licence number:	5099061	Licence expiry date:	18 Aug 2026

Condition name	Description
IA19	Use portable x-ray fluorescence (XRF) radiation apparatus for analysis

Subject to the renewal of the licence before the expiry date and to any condition (s) endorsed hereunder, Mr. STEPHEN CADMAN is hereby licensed under the Radiation Control Act, 1990 by the Environment Protection Authority. The conditions of this licence are attached. Separate to the requirements of this licence, general obligations of licensees are set out in the Radiation Control Act ("the Act"), the Regulations made under the Act and any Codes of Practice referred to therein.

The licensee is responsible for the renewal of this licence before the expiry date and for the ensuring that the mailing address is current. Penalties apply for using regulated material without holding a current and appropriate licence.

The Licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA. The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

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

Team Leader Chemicals and Radiation Licensing
Environment Protection Authority NSW

Licence Conditions

1. General The licensee must, in additional to the obligations that a person responsible for regulated material has under the Act and Regulation, and to any specific conditions:

1.1. only use regulated material for the purpose(s) specified under Condition 2 below and only in a competent and safe manner at all times. This includes the use, handling, movement and storage of regulated material that is used to carry out the activities permitted under this licence.

1.2. where an employer has a radiation management plan approved under cl28 of the Regulation, take all reasonable steps to ensure that procedures set out in the plan with respect to the regulated material authorised to use under the licence are followed.

1.3. not expose any member of the public (other than patients) to ionising radiation that exceed the dose limits set out in Schedule 5 of the Regulation.

1.4. notify the responsible person of any regulated material that may have faults or defects that the licensee has identified or noticed whilst using or having used any regulated material authorised to use under this licence.

1.5. report to the responsible person any incidents classified as a radiation accident under cl37 of the RCR 2013.

1.6. in relation to security enhanced sources report immediately to the responsible person any breach of security measures prescribed under Division 2 of the Regulation that the licensee has identified.

1.7. All notifications required by these conditions must be sent to:
The Manager
Hazardous Materials, Chemicals and Radiation Section
NSW Environment Protection Authority
Locked Bag 5022
Parramatta NSW 2124

Or a PDF file may be sent to radiation@epa.nsw.gov.au

2. Specific Conditions

IA19 - Use portable x-ray fluorescence (XRF) radiation apparatus for analysis

For the IA19 condition the licensee must:

1. only use a portable XRF analyser for the analysis of inanimate object.

2. report to the employer all defects in a portable XRF analyser that may come to the licensee's notice and which are likely to cause a radiation hazard or contribute to one arising.

3. comply with all working rules and emergency procedures established by the employer.

4. not interfere with, remove, alter, displace or render ineffective any device or radiation protection equipment provided to protect the licensee or other persons or interfere with any method or working procedure adopted to reduce radiation exposure.

5. not interfere with or tamper with a portable XRF analyser, or deface any warning sign or label on a portable XRF analyser.

6. not compromise the safety of a portable XRF analyser, or remove or attempt to remove any part from such analysers.

7. ensure that when responsible for transporting a portable XRF analyser the transport arrangements are such to ensure the security of the device at all times.

8. provide supervision, to the level specified in the Regulation, to a person for which they are responsible and who has been granted an approval for an exemption under clause 10 of the Regulation. The licensee may only provide supervision with respect to the regulated material for which the licensee may use under this licence and only for the purposes specified.

3. DICTIONARY

3.1. Act means the Radiation Control Act 1990.

3.2. Ampere (A) means a unit of electric current.

3.3. Authority means the Environment Protection Authority.

3.4. Becquerel (Bq) means a unit of radioactivity equivalent to one disintegration per second.

3.5. Manager means the Manager, Hazardous Materials, Chemicals and Radiation Section

3.6. General Supervision means supervision by a qualified person who oversees the person being supervised and ensures that the person follows safe radiation work practices in relation to the use of regulated material.

3.7. Gray (Gy) means a unit of radiation exposure (absorbed dose) equivalent to the deposition of one Joule per kilogram of material.

3.8. Immediate Supervision means supervision by a qualified person who is present at all times during, and is observing and directing, the use by the person being supervised of regulated material.

3.9. Medical practitioner means a person who holds a current registration under the health Practitioner Regulation National Law (NSW) 86a.

3.10. Qualified person in relation to supervision for regulated material, means a person who is the holder of user licence which allows the person to provide supervision with respect to that regulated material.

Phone 131 555
Phone 02 9995 5555
(from outside NSW)

TTY 133 677, then ask for 131 155

6 Parramatta Square
10 Darcy Street
Parramatta NSW 2150

Locked Bag 5022,
Parramatta
NSW 2124

info@epa.nsw.gov.au
www.epa.nsw.gov.au
ABN 43 692 285 758

3.11. Regulated material means any of the following:
(a) radioactive substances,
(b) ionising (radiation) apparatus,
(c) non-ionising (radiation) apparatus of a kind prescribed by the regulations,
(d) sealed source devices.

3.12. Regulation means the Radiation Control Regulation 2013.

3.13. Tracer study means the deliberate and planned release of a radioactive substance into the environment for the purpose of studying the transfer of matter.

3.14. Volts peak (Vp) means a unit of electrical potential.

Note: For metric multiples of each physical value, the following prefixes apply:
$\mu = x10^{-6}$; $m = x10^{-3}$; $k = x10^{3}$; $M = x10^{6}$; $G = x10^{9}$; $T= x10^{12}$; $P= x10^{15}$

Phone 131 555
Phone 02 9995 5555
(from outside NSW)

TTY 133 677, then
ask for 131 155

6 Parramatta Square
10 Darcy Street
Parramatta NSW 2150

Locked Bag 5022,
Parramatta
NSW 2124

info@epa.nsw.gov.au
www.epa.nsw.gov.au
ABN 43 692 285 758

Appendix 10
ProUCL Output

	A	B	C	D	E	F	G	H	I	J	K	L
1					**Outlier Tests for Selected Uncensored Variables**							
2				**User Selected Options**								
3		Date/Time of Computation		ProUCL 5.15/09/2023 4:27:07 PM								
4				From File	WorkSheet.xls							
5				Full Precision	OFF							
6												
7												
8				**Rosner's Outlier Test for As error**								
9												
10												
11			**Mean**	**320**								
12			**Standard Deviation**	**4658**								
13			**Number of data**	**230**								
14			**Number of suspected outliers**	**1**								
15												
16				Potential	Obs.	Test	Critical	Critical				
17	#	Mean	sd	outlier	Number	value	value (5%)	value (1%)				
18	1	320	4647	70646	180	15.13	3.645	4.016				
19												
20	For 5% Significance Level, there is 1 Potential Outlier											
21	Potential outliers is: 70646											
22												
23	For 1% Significance Level, there is 1 Potential Outlier											
24	Potential outliers is: 70646											
25												

	A	B	C	D	E	F	G	H	I	J	K	L
1					Outlier Tests for Selected Uncensored Variables							
2				User Selected Options								
3	Date/Time of Computation			ProUCL 5.15/09/2023 3:25:23 PM								
4				From File	WorkSheet.xls							
5				Full Precision	OFF							
6												
7												
8			Rosner's Outlier Test for Cu error									
9												
10												
11			Mean	126.7								
12			Standard Deviation	979.9								
13			Number of data	230								
14			Number of suspected outliers	1								
15												
16				Potential	Obs.	Test	Critical	Critical				
17	#	Mean	sd	outlier	Number	value	value (5%)	value (1%)				
18	1	126.7	977.8	14729	149	14.93	3.645	4.016				
19												
20	For 5% Significance Level, there is 1 Potential Outlier											
21	Potential outliers is: 14729											
22												
23	For 1% Significance Level, there is 1 Potential Outlier											
24	Potential outliers is: 14729											
25												

	A	B	C	D	E	F	G	H	I	J	K	L
1					**Outlier Tests for Selected Uncensored Variables**							
2				**User Selected Options**								
3		Date/Time of Computation		ProUCL 5.15/09/2023 3:31:22 PM								
4				From File	WorkSheet.xls							
5				Full Precision	OFF							
6												
7												
8				**Rosner's Outlier Test for Pb error**								
9												
10												
11			**Mean**	**20.27**								
12			**Standard Deviation**	**102.5**								
13			**Number of data**	**230**								
14			**Number of suspected outliers**	**1**								
15												
16				Potential	Obs.	Test	Critical	Critical				
17	#	Mean	sd	outlier	Number	value	value (5%)	value (1%)				
18	1	20.27	102.3	1440	149	13.87	3.645	4.016				
19												
20	For 5% Significance Level, there is 1 Potential Outlier											
21	Potential outliers is: 1440											
22												
23	For 1% Significance Level, there is 1 Potential Outlier											
24	Potential outliers is: 1440											
25												

	A	B	C	D	E	F	G	H	I	J	K	L
1					**Outlier Tests for Selected Uncensored Variables**							
2				**User Selected Options**								
3		Date/Time of Computation		ProUCL 5.15/09/2023 3:32:35 PM								
4				From File	WorkSheet.xls							
5				Full Precision	OFF							
6												
7												
8				**Rosner's Outlier Test for Zn error**								
9												
10												
11			**Mean**	**125.7**								
12			**Standard Deviation**	**1329**								
13			**Number of data**	**230**								
14			**Number of suspected outliers**	**1**								
15												
16				Potential	Obs.	Test	Critical	Critical				
17	#	Mean	sd	outlier	Number	value	value (5%)	value (1%)				
18	1	125.7	1326	19964	149	14.96	3.645	4.016				
19												
20	For 5% Significance Level, there is 1 Potential Outlier											
21	Potential outliers is: 19964											
22												
23	For 1% Significance Level, there is 1 Potential Outlier											
24	Potential outliers is: 19964											
25												

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.15/09/2023 5:15:31 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

As worst case

General Statistics

Total Number of Observations	229	Number of Distinct Observations	205
		Number of Missing Observations	1
Minimum	2.95	Mean	17.31
Maximum	618.6	Median	11.98
SD	40.9	Std. Error of Mean	2.703
Coefficient of Variation	2.363	Skewness	14.08

Normal GOF Test

Shapiro Wilk Test Statistic	0.187	**Shapiro Wilk GOF Test**
5% Shapiro Wilk P Value	0	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.373	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.059	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	21.77	95% Adjusted-CLT UCL (Chen-1995)	24.44
		95% Modified-t UCL (Johnson-1978)	22.19

Gamma GOF Test

A-D Test Statistic	4.367E+28	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.767	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.187	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.0611	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.919	k star (bias corrected MLE)	1.896
Theta hat (MLE)	9.022	Theta star (bias corrected MLE)	9.128
nu hat (MLE)	878.7	nu star (bias corrected)	868.6
MLE Mean (bias corrected)	17.31	MLE Sd (bias corrected)	12.57
		Approximate Chi Square Value (0.05)	801.2
Adjusted Level of Significance	0.049	Adjusted Chi Square Value	800.8

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	18.77	95% Adjusted Gamma UCL (use when n<50)	18.78

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.922	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk P Value	0	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.124	**Lilliefors Lognormal GOF Test**

	A	B	C	D	E	F	G	H	I	J	K	L
55					5% Lilliefors Critical Value	0.059	Data Not Lognormal at 5% Significance Level					
56	Data Not Lognormal at 5% Significance Level											
57												
58	**Lognormal Statistics**											
59					Minimum of Logged Data	1.082					Mean of logged Data	2.569
60					Maximum of Logged Data	6.428					SD of logged Data	0.558
61												
62	**Assuming Lognormal Distribution**											
63					95% H-UCL	16.31					90% Chebyshev (MVUE) UCL	17.04
64					95% Chebyshev (MVUE) UCL	17.85					97.5% Chebyshev (MVUE) UCL	18.99
65					99% Chebyshev (MVUE) UCL	21.22						
66												
67	**Nonparametric Distribution Free UCL Statistics**											
68	**Data do not follow a Discernible Distribution (0.05)**											
69												
70	**Nonparametric Distribution Free UCLs**											
71					95% CLT UCL	21.76					95% Jackknife UCL	21.77
72					95% Standard Bootstrap UCL	21.69					95% Bootstrap-t UCL	34.48
73					95% Hall's Bootstrap UCL	39.42					95% Percentile Bootstrap UCL	22.4
74					95% BCA Bootstrap UCL	25.51						
75					90% Chebyshev(Mean, Sd) UCL	25.42					95% Chebyshev(Mean, Sd) UCL	29.09
76					97.5% Chebyshev(Mean, Sd) UCL	34.19					99% Chebyshev(Mean, Sd) UCL	44.2
77												
78	**Suggested UCL to Use**											
79					95% Chebyshev (Mean, Sd) UCL	29.09						
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/09/2023 12:38:18 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Pb worst case

General Statistics

Total Number of Observations	229	Number of Distinct Observations	223
		Number of Missing Observations	1
Minimum	3.61	Mean	35.71
Maximum	747.2	Median	21.35
SD	56.19	Std. Error of Mean	3.713
Coefficient of Variation	1.573	Skewness	9.288

Normal GOF Test

Shapiro Wilk Test Statistic	0.432	**Shapiro Wilk GOF Test**
5% Shapiro Wilk P Value	0	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.286	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.059	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	41.85	95% Adjusted-CLT UCL (Chen-1995)	44.26
		95% Modified-t UCL (Johnson-1978)	42.23

Gamma GOF Test

A-D Test Statistic	6.77	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.774	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.124	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.0615	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.406	k star (bias corrected MLE)	1.39
Theta hat (MLE)	25.4	Theta star (bias corrected MLE)	25.69
nu hat (MLE)	643.9	nu star (bias corrected)	636.8
MLE Mean (bias corrected)	35.71	MLE Sd (bias corrected)	30.29
		Approximate Chi Square Value (0.05)	579.3
Adjusted Level of Significance	0.049	Adjusted Chi Square Value	578.9

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	39.26	95% Adjusted Gamma UCL (use when n<50)	39.28

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.972	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk P Value	0.0238	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.0762	**Lilliefors Lognormal GOF Test**

	A	B	C	D	E	F	G	H	I	J	K	L
55					5% Lilliefors Critical Value	0.059	Data Not Lognormal at 5% Significance Level					
56	Data Not Lognormal at 5% Significance Level											
57												
58	Lognormal Statistics											
59					Minimum of Logged Data	1.284					Mean of logged Data	3.179
60					Maximum of Logged Data	6.616					SD of logged Data	0.804
61												
62	Assuming Lognormal Distribution											
63					95% H-UCL	36.95					90% Chebyshev (MVUE) UCL	39.2
64					95% Chebyshev (MVUE) UCL	41.94					97.5% Chebyshev (MVUE) UCL	45.74
65					99% Chebyshev (MVUE) UCL	53.21						
66												
67	Nonparametric Distribution Free UCL Statistics											
68	Data do not follow a Discernible Distribution (0.05)											
69												
70	Nonparametric Distribution Free UCLs											
71					95% CLT UCL	41.82					95% Jackknife UCL	41.85
72					95% Standard Bootstrap UCL	41.94					95% Bootstrap-t UCL	46.27
73					95% Hall's Bootstrap UCL	68.99					95% Percentile Bootstrap UCL	42.65
74					95% BCA Bootstrap UCL	45.53						
75					90% Chebyshev(Mean, Sd) UCL	46.85					95% Chebyshev(Mean, Sd) UCL	51.9
76					97.5% Chebyshev(Mean, Sd) UCL	58.9					99% Chebyshev(Mean, Sd) UCL	72.66
77												
78	Suggested UCL to Use											
79					95% Chebyshev (Mean, Sd) UCL	51.9						
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												

	A	B	C	D	E	F	G	H	I
1	Cu error	Cu worst ca	Pb error	Pb worst ca	Zn error	Zn worst ca	As error	As worst case	
2	41.76	50.07	8.69	10.42	20.35	24.4	7.88	9.45	
3	93.01	111.52	17.27	20.71	42.07	50.44	15.8	18.94	
4	28.65	34.35	8.28	9.93	11.4	75.3	4.88	17.13	
5	30.51	36.58	8.41	10.08	11.43	62.51	7.06	8.47	
6	34.79	41.71	6.9	22.52	12.17	36.73	8.92	10.7	
7	106.19	127.33	19.77	23.71	43.41	52.05	17.17	20.59	
8	70.22	84.2	11.47	13.75	32.3	38.73	7.76	28.21	
9	21.71	24.95	5.08	21.29	10.04	99.02	6.3	7.24	
10	113.36	135.92	19.77	23.71	51.96	62.3	17.43	20.9	
11	52.42	62.85	12.48	14.96	26.71	32.03	10.66	12.78	
12	32.03	108.09	11.29	13.54	23.09	27.69	9.6	11.51	
13	49.17	58.96	11.12	13.33	18.96	99.08	6.93	25.88	
14	41.07	49.24	8.69	10.42	26.63	473.13	7.9	9.47	
15	33.82	40.55	8.58	10.29	16.53	163.45	7.15	8.57	
16	19.18	62.63	5.71	18.73	17.01	274.23	7.06	8.47	
17	38.4	46.04	9.14	10.96	23.17	368.8	7.77	9.32	
18	29.21	89.47	11.17	13.39	18.04	134.66	9.46	11.34	
19	76.98	92.3	14.65	17.57	36.5	43.76	12.69	15.22	
20	63.64	76.31	13.88	16.64	31.22	37.43	11.66	13.98	
21	9.74	42.43	4.74	5.68	7.99	132.39	2.69	8.09	
22	27.11	90.64	10.62	12.73	16.15	105.56	6.23	19.77	
23	14.37	67.38	5.13	25.79	12.69	203.59	6.31	6.66	
24	45.06	54.03	8.82	39.66	18.53	132.03	10.47	12.55	
25	51.22	61.41	10.36	54.90	22.98	190.1	11.9	14.27	
26	101.68	121.92	21.48	25.76	37.78	160.1	18.11	21.71	
27	125.88	150.94	18.02	59.75	61.32	73.53	21.38	25.64	
28	75.85	231.92	17.85	21.40	53.63	64.3	15.95	19.12	
29	18.1	21.7	5	34.71	10.69	178.36	6.23	7.47	
30	35.02	41.99	9.07	10.88	13.27	63.49	7.35	8.81	
31	18.41	72.59	5.61	22.41	13.08	154.15	7.04	8.91	
32	16.64	19.95	4.46	5.35	10.25	182.76	2.65	8.06	
33	45.57	54.64	11.11	13.32	23.14	27.75	9.67	11.59	
34	68.84	82.54	14.41	17.28	31.61	37.9	12.49	14.98	
35	38.47	46.13	9.88	11.85	13.69	50.19	8.25	9.89	
36	34.72	41.63	8.81	10.56	11.9	37.28	7.69	9.22	
37	66.34	79.54	13.36	16.02	29.29	35.12	10.55	12.65	
38	27.04	91.57	8.63	10.35	19.12	22.93	7.67	9.2	
39	24.82	76.45	8.77	10.52	12.88	52.3	7.74	9.28	
40	22.92	77.47	6.96	32.31	13.59	86.4	5.98	18.28	
41	46.81	56.13	10.91	13.08	16.7	57.49	9.16	10.98	
42	46.84	161.71	12.19	14.62	31.64	37.94	10.39	12.46	
43	53.42	64.05	11.69	14.02	25.47	30.54	10.17	12.19	
44	83.38	99.98	14.99	17.97	38.82	46.55	13.78	16.52	
45	80.54	96.57	16.03	19.22	39.55	47.42	13.74	16.47	
46	31.69	38	8.6	10.31	13.74	109.4	7.31	8.76	
47	27.31	32.75	7.19	8.62	10.76	64.74	6.07	7.28	
48	18.49	22.17	5.12	6.14	7.82	58.13	4.34	5.2	
49	9.82	31.37	3.64	14.30	10.04	217.66	3.05	9.32	
50	58.09	69.65	12.59	15.10	27.39	32.84	10.78	12.93	
51	16.48	21.68	4.25	24.01	8.74	132.01	3.61	12.76	
52	29.6	35.49	7.33	8.79	10.53	42.35	6.25	7.49	
53	31.51	37.78	8	9.59	13.2	99.7	6.74	8.08	
54	43.16	51.75	7.98	25.66	16.2	71.61	9.96	11.94	
55	38.94	46.69	9.65	11.57	15.58	81.64	7.73	9.27	

	A	B	C	D	E	F	G	H	I
56	21.61	25.91	5.4	29.29	9.16	74.63	6.74	8.08	
57	41.73	50.04	10.33	12.39	14.96	55.83	8.63	10.35	
58	17	20.38	5.04	6.04	6.83	48.06	4.15	4.98	
59	17.44	20.91	4.37	20.91	7.39	61.39	5.28	6.33	
60	39.54	47.41	9.73	11.67	18.22	21.85	8.46	10.14	
61	27.45	31.55	9.41	101.53	10.67	60.06	11.12	12.78	
62	31.07	37.25	6.74	32.51	13.81	118.06	8.39	10.06	
63	24.24	29.06	6.19	39.11	9.54	61.74	7.36	8.82	
64	45.39	54.42	8.12	24.92	15.71	52.04	10.59	12.7	
65	17.64	21.15	5.95	7.13	7.32	59.14	4.97	5.96	
66	27.35	85.8	8.79	50.36	14.46	62.54	10.45	12.53	
67	56.21	67.4	11.04	13.24	24.08	28.87	9.44	11.32	
68	87.69	105.14	18.03	21.62	32.24	129.54	15.2	18.23	
69	65.01	77.95	11.62	13.93	27.91	33.47	7.6	27.55	
70	22.15	26.56	6.51	7.81	9.11	61.58	5.21	6.25	
71	34.83	52.77	7.95	58.73	12.4	65.68	9.64	14.61	
72	170.99	205.02	29.97	35.94	63.24	75.83	26.6	31.89	
73	23.93	28.69	6.23	36.64	9	43.62	7.46	8.94	
74	14.19	72.16	7.47	82.76	16.03	359.86	8.83	10.59	
75	13.42	41.82	5.66	44.84	9.75	117.6	6.64	7.96	
76	22.67	73.85	7.96	50.53	16.55	185.31	9.68	11.61	
77	24.19	29	6.16	40.73	12.06	146.49	5.3	19.9	
78	23.98	80.77	9.1	69.46	19.94	285.6	11.16	13.38	
79	12.38	44.74	6.98	94.52	13.59	320.48	5.72	21.06	
80	21.17	67.35	7.2	8.63	11.89	64.68	6.24	7.48	
81	106.67	127.9	15.41	51.88	46.42	55.66	18.4	22.06	
82	12.55	84.1	7.81	157.52	15.5	535.86	9.19	12.94	
83	165.93	198.96	59.82	71.73	283.72	340.19	9.02	10.82	
84	64.02	76.76	12.3	14.75	29.87	35.82	10.42	12.49	
85	32.93	39.48	10	98.81	16.19	178.15	11.68	14	
86	19.91	23.87	5.97	50.85	10.83	155.92	7.17	8.6	
87	38.03	45.6	8.11	43.12	19.85	246.31	9.95	11.93	
88	28.32	33.96	6	24.42	11.1	66.39	7.69	9.22	
89	23.97	28.74	6.78	54.17	13.67	198.68	8.39	10.06	
90	14.48	17.36	4.48	34.93	7.75	106.77	5.32	6.38	
91	39.83	47.76	11.2	100.11	24.38	381.57	13.31	15.96	
92	152.98	183.43	28.02	33.60	71.71	425.28	27.87	33.42	
93	25.1	89.44	7.12	28.13	27.12	569.92	9.1	10.91	
94	14.97	59.26	6.94	84.90	16.2	439.35	8.21	11.9	
95	31.25	37.47	9.06	82.51	15.84	185.53	10.69	12.82	
96	12.69	41.69	6.83	86.32	23.16	986.79	8.13	9.75	
97	24.92	29.88	8.2	88.62	13.64	192.48	9.82	11.77	
98	99.72	119.57	25.07	85.12	50.5	211.82	28.71	34.42	
99	124.07	148.76	18.16	57.79	57.77	69.27	21.9	26.26	
100	26.06	31.25	8.02	78.79	12.76	142.84	9.44	11.32	
101	14.82	63.26	6.78	67.59	10.5	122.88	8.27	9.92	
102	17.06	53.15	5.23	18.45	11.18	101.93	6.53	7.83	
103	20.78	70.74	6.88	37.12	12.62	95.38	8.32	9.98	
104	13.39	46.54	8.34	124.31	12.3	212.2	9.99	11.48	
105	14.44	17.31	3.89	4.66	9.54	196.19	3.26	3.91	
106	10.16	12.18	3.01	3.61	6.73	136.94	2.46	2.95	
107	56.01	67.16	9.32	28.78	29.28	35.11	11.37	13.63	
108	48.74	58.44	12.31	14.76	17.46	71.95	9.99	11.98	
109	59.64	71.51	12.87	15.43	28.93	34.69	11.19	13.42	
110	36.46	43.72	8.33	46.40	16.19	127	9.68	11.61	

	A	B	C	D	E	F	G	H	I
111	30.06	36.04	6.39	27.84	14.16	144.65	7.79	9.34	
112	26.49	31.76	6.78	41.37	12.98	134.86	8.34	10	
113	36.28	43.5	11.16	13.38	13.99	46.27	9.08	10.89	
114	15.43	69.74	6.4	7.53	14.03	252.56	5.42	6.38	
115	9.43	29.66	4.16	28.90	12.49	369.27	3.48	11.71	
116	18.36	22.01	6.01	59.34	9.18	113.93	7.15	8.57	
117	23.16	27.77	5.75	32.40	9.5	70.66	6.78	8.13	
118	37.13	44.52	9.06	58.73	16.1	123.92	11.17	13.39	
119	19.76	23.69	4.75	21.06	8.56	72.25	5.86	7.03	
120	49.84	59.76	12.14	14.56	19.1	94.83	10.05	12.05	
121	47.4	56.83	8.51	28.84	16.88	59.02	10.02	12.01	
122	73.2	87.77	12.64	15.16	31.39	37.64	10.87	13.03	
123	33.63	40.32	6.6	21.20	17.69	214.2	8.53	10.23	
124	18.08	21.78	5.2	38.95	9.87	141.13	6.28	7.57	
125	9.18	31.01	4.49	5.38	9.2	200.44	2.56	7.73	
126	17.92	21.49	4.42	19.84	12.43	253.68	5.29	6.34	
127	9.47	40.67	3.62	17.18	7.97	137.39	4.45	5.34	
128	19.85	23.8	6.4	7.67	8.16	62.09	5.38	6.45	
129	19.17	22.99	6.06	7.27	8.88	92.4	5.18	6.21	
130	33.83	40.56	8.92	10.70	12.31	54.74	7.28	8.73	
131	45.03	53.99	10.8	12.95	16.61	69.78	9.01	10.8	
132	13.09	15.7	3.73	20.17	8.53	169.1	3.11	10.14	
133	41.52	49.78	10.93	13.11	15.01	56.62	9.4	11.27	
134	12.33	40.52	4.85	28.79	13.18	286.59	5.89	6.85	
135	48.51	58.17	8.73	29.45	16.73	50.19	11.06	13.26	
136	132.65	159.05	23.65	28.36	55.83	66.94	21.36	25.61	
137	57.56	69.02	10.47	43.76	20.88	85.52	12.79	15.34	
138	55.92	67.05	13.66	16.38	26.74	32.06	11.69	14.02	
139	47.34	56.76	8.51	26.21	18.84	110.46	10.51	12.6	
140	32.6	39.09	7.75	9.29	12	50.91	6.57	7.88	
141	58.06	69.62	10.59	46.01	20.83	88.5	13.07	15.67	
142	52.46	62.9	10.56	12.66	24.79	29.72	9.13	10.95	
143	38.59	46.27	9.72	11.65	17.82	21.37	8.12	9.74	
144	24.57	71.16	7.28	29.00	17.37	171.71	8.75	10.06	
145	76.71	91.98	14.34	17.19	35.24	42.25	12.04	14.44	
146	67.63	81.09	12.87	15.43	32.18	38.59	11.65	13.97	
147	45.08	459.09	9.62	37.76	26.32	31.56	12.02	14.41	
148	21.82	26.16	5	21.35	11.24	141.47	6.13	7.35	
149	19.94	23.91	6.07	7.28	8.64	81.7	4.96	5.95	
150	14728.89		1439.79		19964.13		515.94	618.63	
151	53.73	64.42	8.97	10.76	25.49	30.56	8.11	9.72	
152	46.02	55.18	11.65	13.97	32.26	38.68	10.06	12.06	
153	86.63	103.87	14.73	17.66	40	47.96	12.48	14.96	
154	18.07	62.59	5.39	18.69	15.49	243.15	6.53	7.83	
155	65.03	71.15	12.83	14.04	28.04	205.15	11.01	12.05	
156	102.26	122.61	20.67	24.78	46.54	55.8	17.43	20.9	
157	42.52	50.98	11.09	13.30	16.34	92.57	9.48	11.37	
158	150.9	180.94	26.01	31.19	67.18	80.55	22.82	27.36	
159	202.96	243.36	33.56	40.24	100.79	120.85	30.57	36.65	
160	134.13	160.83	24.15	132.22	50.92	238.88	20.94	25.11	
161	58.35	69.96	12.58	15.08	28.79	34.52	10.55	12.65	
162	58.27	69.87	10.26	12.30	26.63	31.93	9.45	11.33	
163	61.35	73.56	11.8	14.15	21.15	74.81	7.54	25.37	
164	84.93	101.83	16.05	19.24	36.87	44.21	14.26	17.1	
165	47.23	57.6	11.07	13.50	23.37	28.5	9.66	11.78	

	A	B	C	D	E	F	G	H	I
166	27.67	33.18	6.77	40.18	15.59	215.32	7.81	9.36	
167	57.09	68.45	12.48	14.96	26.47	251.43	10.84	13	
168	16.01	67.72	6.41	50.65	12.07	159.68	7.81	9.36	
169	50.06	150.6	11.9	14.27	30.81	36.94	10.92	13.09	
170	118.92	142.59	25.6	179.32	53.8	64.51	29.94	35.9	
171	27.27	32.7	8.04	72.85	12.15	108.13	6.77	25.36	
172	112.95	135.43	21.16	25.37	49.09	58.86	18.16	21.77	
173	26.04	31.22	5.6	23.13	11.16	95.07	6.93	8.31	
174	36.12	43.31	6.95	24.10	13.83	79.52	6.14	21.43	
175	56.07	66.75	10.22	12.17	27.42	32.64	9.07	10.8	
176	42.43	50.88	12.47	123.66	20.4	210.28	15.43	18.5	
177	210.85	252.82	30.89	37.04	85.7	102.76	30.54	36.62	
178	88.81	106.49	17.43	20.90	32.09	124.98	14.85	17.81	
179	137.53	164.9	23.74	28.47	69.85	83.75	15.24	46.24	
180	142.85	171.28	25.95	31.12	65.17	78.14	22.7	27.22	
181	2366.28	2837.27	623.19	747.23	3030.73	3633.97	70646		
182	73.01	87.54	13.89	70.13	29.44	169.45	16.47	19.75	
183	14.98	46.22	5.77	37.93	16.41	364.21	7.19	8.62	
184	155.49	186.44	23.75	28.48	66.11	79.27	20.22	24.24	
185	84.96	98.79	14.89	60.73	35.89	215.81	18.42	21.42	
186	146.26	175.37	21.87	26.22	71.32	85.52	14.46	43.48	
187	121.23	145.36	24.41	29.27	58.06	278	19.1	22.9	
188	191.31	229.39	32.08	38.47	77.93	93.44	26.7	32.01	
189	39.6	47.48	7.69	31.40	17.73	155.26	9.55	11.45	
190	57.36	68.78	11.36	13.62	27.23	32.65	9.42	11.29	
191	19.97	61.5	7.35	48.00	13.65	132.39	8.86	10.62	
192	14.68	53.97	6.52	60.47	11.31	153.03	5.41	17.39	
193	39.42	47.27	8.03	37.61	13.98	57.91	9.45	11.33	
194	89.72	107.58	15.81	18.96	40.97	49.12	14.95	17.93	
195	50.72	60.82	8.93	29.20	26.06	31.25	11.34	13.6	
196	37.67	42.81	7.8	34.93	18.15	177.95	9.39	10.67	
197	11.24	40.05	4.03	16.88	8.14	101.52	5.07	6.08	
198	56.23	67.42	12.99	15.58	26.25	31.47	10.94	13.12	
199	31.47	37.73	8.98	10.77	14.64	145.67	7.63	9.15	
200	22.81	70.56	7.27	8.72	13.02	79.12	6.57	7.88	
201	159.92	191.75	25.77	115.64	74.42	89.23	31.61	37.9	
202	66.98	80.31	17.73	153.15	24.98	105.25	21.74	26.07	
203	76.08	91.22	17.36	120.49	39.32	47.15	20.56	24.65	
204	117.48	140.86	23.64	146.64	58.84	70.55	29	34.77	
205	98.87	118.55	19.34	108.17	51.89	62.22	24.26	29.09	
206	37.44	46.22	7.93	41.89	15.22	113.58	9.79	12.09	
207	66.71	212.39	20.03	24.02	50.04	60	17.98	21.56	
208	153.98	184.63	27.63	33.13	73.74	88.42	23.19	27.81	
209	57.84	69.35	10.66	46.39	26.31	227.11	13.1	15.71	
210	49.9	59.83	12.5	14.99	20.9	153.47	10.47	12.55	
211	89.2	106.95	14.6	59.74	31.61	125.86	17.51	21	
212	63.85	76.56	11.68	53.32	26.23	175.07	15.12	18.13	
213	9.52	53.6	4.27	37.17	10.76	294.5	3.54	12.59	
214	98.95	118.65	16.94	20.31	46.1	55.28	11.31	40.23	
215	49.4	59.23	8.61	26.95	18	71.43	11.32	13.57	
216	27.87	30.59	8.37	9.19	12.72	108.97	7.13	7.83	
217	60.27	72.27	12.01	14.40	21.97	85.56	10.49	12.58	
218	125.81	150.85	27.92	33.48	73.08	87.63	26.76	32.09	
219	247.14	296.33	28.13	33.73	96.57	115.79	22.11	79.11	
220	56.17	67.35	11.85	14.21	27.55	33.03	10.48	12.57	

	A	B	C	D	E	F	G	H	I
221	15.75	47.45	4.96	16.67	10.29	93.51	6.18	7.19	
222	59.11	70.88	12.54	15.04	27.91	33.47	7.66	23.62	
223	45.29	54.3	9.94	11.92	22.31	26.75	8.87	10.64	
224	80.42	96.43	16.99	20.37	36.01	43.18	14.04	16.83	
225	44.83	53.75	10.64	12.76	23.21	27.83	8.81	10.56	
226	29.02	34.8	7.93	9.51	13.14	117.7	6.73	8.07	
227	23.02	94.57	9.23	11.07	13.52	97.35	5.44	18.53	
228	20.43	73.79	8.64	10.36	10.2	39.05	6.75	8.09	
229	124.95	149.82	16.83	20.18	52.68	63.17	14.85	17.81	
230	32.45	106.79	10.9	13.07	17.21	77.41	9.12	10.94	
231	86.69	103.94	14.77	17.71	36.97	44.33	9.65	32.73	