

Intended for
Transport for New South Wales

Document type
Report

Date
April 2024

Tarago Air Quality Monitoring Report

April 2024

Tarago Air Quality Monitoring Report

April 2024

Project name **Tarago Air Quality Monitoring Report**

Project no. **318001376-004**

Recipient **Transport for New South Wales**

Document type **Report**

Version **1**

Date **1 May 2024**

Prepared by [REDACTED]

Checked by [REDACTED]

Approved by [REDACTED]

Description **Data collected from 18 October 2022 to 26 March 2024 for the air quality monitoring program at Tarago, NSW**

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>

Confidential

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

Contents

1.	Overview	2
2.	Methodology	4
2.1	Approach	4
2.1.1	Deposited dust and lead	4
2.1.2	TSP and lead	5
2.1.3	PM ₁₀ and PM _{2.5}	5
2.2	Regional meteorological monitoring	5
2.3	Relevant air quality criteria	6
3.	Results	7
3.1	Deposited dust and lead	7
3.2	TSP and lead	7
3.3	Regional meteorological monitoring	9
4.	Summary	15
5.	Limitations	16
6.	References	17

1. Overview

Ramboll Australia Pty Ltd (Ramboll) has been commissioned by Transport for New South Wales (TfNSW) to recommence an air quality monitoring (AQM) program to inform air quality impacts resulting from retained lead-containing ore within the Goulburn - Bombala rail corridor in the Tarago Area.

Ramboll has provided assessment and management advice for contamination at and originating from the Tarago Rail Siding which was historically used to load-out ore concentrates. The Tarago Lead Management Action Plan (Ramboll, 2022) was developed to address risks related to exposure to lead from the site.

The Action Plan prescribed:

- Controls including application of a polymer sealant over exposed contaminated soils and application of stabilised sand over a stockpile of spoil generated during rail works; and
- Routine monitoring of contaminant concentrations in surface water and air surrounding the site as lines of evidence for assessing the effectiveness of controls described in the Action Plan.

Ramboll implemented and maintained an AQM program from April 2020 to August 2021 for a previous client and has now been commissioned to recommence the program. The focus of this monitoring program is lead in particulate form, both for ambient airborne fractions and deposited dust. This program was commissioned during late October 2022, and this report presents results from the data collected since monitoring commenced (18 October 2022).

Previous reports delivered by Ramboll during this program are listed below:

- 318001376-004 Tarago Air Quality Monitoring Report 2022-11 dated 7 December 2022, summarising data collect to 17 November 2022.
- 318001376-004 Tarago Air Quality Monitoring Report 2022-12 dated 13 February 2023, summarising data collect to 15 December 2022.
- 318001376-004 Tarago Air Quality Monitoring Report 2023-01 dated 17 February 2023, summarising data collect to 12 January 2023.
- 318001376-004 Tarago Air Quality Monitoring Report 2023-02 dated 8 September 2023, summarising data collect to 10 August 2023.
- 318001376-004 Tarago Air Quality Monitoring Report 2023-03 dated 20 October 2023, summarising data collect to 10 October 2023.

A map of the monitoring locations is shown in Figure 1-1.

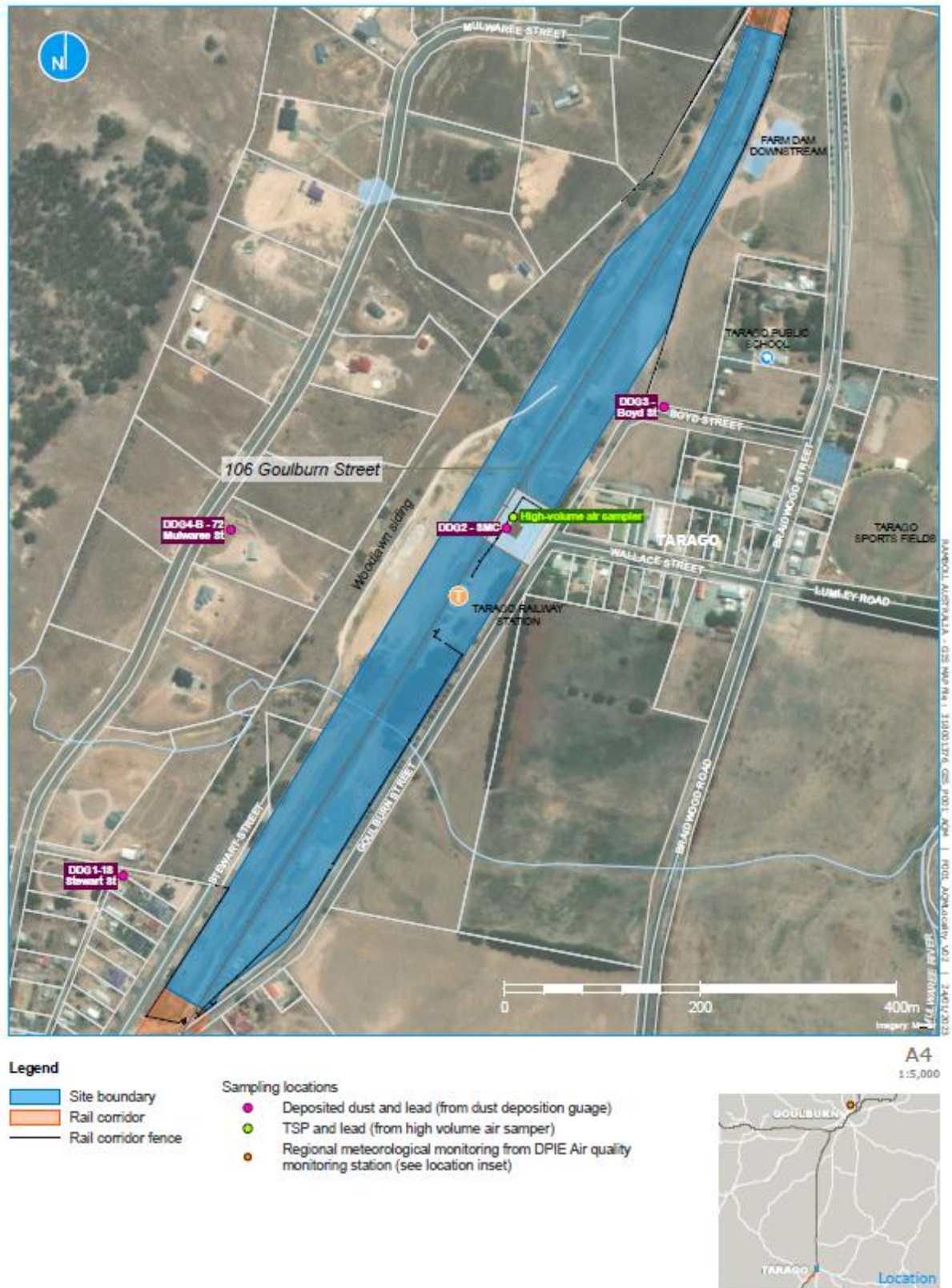


Figure 1-1: Map of air quality monitoring locations within Tarago

2. Methodology

2.1 Approach

The AQM program consists of two dust monitoring techniques interpreted in conjunction with meteorological data collected by the Department of Planning, Industry and Environment (DPIE) in Goulburn, approximately 38 km to the north-north-east. These techniques are:

- Deposited dust and lead measured continuously throughout each month (**Section 2.1.1**); and
- Total suspended particulates (TSP) including lead contained within the TSP measured for a 24-hour period completed every one day in six days (**Section 2.1.2**).

Siting of all equipment was completed, as far as practicable, in accordance with the recommendations of *AS/NZS 3580.1.1:2016 Methods for sampling and analysis of ambient air Guide to siting air monitoring equipment* (Standards Australia and Standards New Zealand, 2016a). Locations of all equipment are shown in **Figure 1-1** and images of the monitoring equipment in-situ are shown in **Appendix 1**. Siting was weighed against technical and practical considerations and the fence is considered a minor obstruction to the contaminated site, where one of the instrument sampling inlets is below the fence-line.

Sampling location DDG4 during the 2020 to 2021 monitoring campaign was located at 96 Mulwaree St, Tarago. The resident declined to have the equipment reinstated, so access was sought and granted for monitoring at 72 Mulwaree St, Tarago. The new monitoring locations, now referred to as DDG4-B, is approximately 200m to the south-south-west of the DDG4. Both monitoring locations are considered to be representative of potential impacts to the west of the rail siding.

2.1.1 Deposited dust and lead

Deposited dust is particulate matter that settles out of the air onto the ground or surfaces. It generally consists of larger, heavier particles from a local source and is considered a nuisance impact rather than a health concern. These particles contain a variety of components such as nitrates, sulphates, organic chemicals, metals, soil or dust particles and allergens.

For this study, sampling and analysis was conducted in accordance with the recommendations of *AS/NZS 3580.10.1:2016 Methods for sampling and analysis of ambient air Determination of particulate matter - Deposited matter - Gravimetric method* (Standards Australia and Standards New Zealand, 2016b). Each gauge is installed to collect deposited matter in a glass bottle together with rainwater through a funnel over a period of 30 days +/- 2 days at a mounted height of approximately 2 m above ground surface. The samples are analysed for insoluble solids (including ash and combustible matter) and lead by inductively coupled plasma mass spectrometry (ICP-MS).

Four dust deposition gauges were placed to assess deposited dust and lead in residential areas east, west, and south-east of the source area and at 106 Goulburn Street (the nearest sensitive receptor).

2.1.2 TSP and lead

TSP are solid particles and water droplets less than approximately 50 to 100 µm in aerodynamic diameter. This parameter is dominated by larger entrained particles which are generally considered a nuisance dust compared to finer particles such as PM₁₀ and PM_{2.5} which are known to be hazardous to human health. The Australian Standard to measure lead in particulates—*AS/NZS 3580.9.15:2014 Methods for sampling and analysis of ambient air Method 9.15: Determination of suspended particulate matter — Particulate metals high or low volume sampler gravimetric collection — Inductively coupled plasma (ICP) spectrometric method* (Standards Australia and Standards New Zealand, 2014)—requires measurement of the TSP fraction to analyse for lead content.

Sampling and analysis for this program has been conducted in accordance with the Australian Standard. Calibration has been completed by Ramboll, consistent with the Australian Standard and manufacturers recommendations. The program utilises a high-volume air sampler (Hi-Vol 3000) with a TSP head, that has a reported cut-point for particles of 50 µm diameter or less. The sampler draws a known volume of air across a pre-weighed filter for 24-hours. The filters are weighed following sampling to determine the weight of the particulate matter captured and further analysed for lead concentration using ICP-MS. To compare particulate lead to the air quality annual standard, lead sampling must be carried out for a period of 24 hours at least every sixth day, the approach applied for this program.

TSP including lead contained within the TSP were measured at 106 Goulburn Street identified as the nearest sensitive receptor to the source area.

2.1.3 PM₁₀ and PM_{2.5}

The previous monitoring program during 2020 to 2021 included collection of continuous particulate matter at less than 10 microns in aerodynamic diameter (i.e. PM₁₀) and less than 2.5 microns (i.e. PM_{2.5}). This measurement was also included in the Tarago Lead Management Action Plan (Ramboll, 2022), but was not included in the scope of works to reinstate the monitoring program on the basis of low correlation with lead values measured previously.

Continuous particle monitoring may be reinstated at a later date to inform proactive response to potential emissions during remediation.

2.2 Regional meteorological monitoring

The Department of Planning, Industry and Environment (DPIE) maintains a state-wide network of air quality monitoring stations, including one commissioned in late 2019 in Goulburn, NSW. The station measures meteorological parameters, of which wind speed, wind direction, temperature, humidity, and rainfall are of interest to this program. One-hourly averaged data have been analysed to determine prevailing conditions. DPIE do not monitor lead routinely as part of their state-wide air quality monitoring program.

A limitation of using meteorological data from the Goulburn station is its different location, terrain, and consequent micro-conditions to the studied site. Comparison with CSIRO's The Air Pollution Model (TAPM) predicted meteorological data centred on Tarago was done in the previous AQM program (Ramboll, 2021). Both datasets showed prevailing westerly winds, with a secondary

easterly component, while the TAPM data predicted higher wind speeds in Tarago than measured in Goulburn. It is noted there are limitations to both datasets, where the Goulburn data is collected at distance and influenced by different terrain influences, whereas the modelled data has inherent uncertainty and assumptions, and the technique is limited in its prediction of calm conditions. Therefore, for this assessment the DPIE Goulburn station data was used and is deemed appropriate for a macro understanding of the weather of the region in the absence of local monitored meteorological data.

2.3 Relevant air quality criteria

Air quality criteria relevant to the program are presented in **Figure 2-1**.

Figure 2-1: Air quality criteria relevant to Tarago air quality monitoring program

Pollutant	Averaging period	Criteria	Source
Lead	Annual	0.5 µg/m ³	NEPC (2021)
TSP	Annual	90 µg/m ³	NHMRC (1996)
Deposited dust (as insoluble solids)	Annual	4 g/m ² /month	NERDDC (1988), NSW EPA (2022)

3. Results

3.1 Deposited dust and lead

The monthly deposited dust results are presented in **Table 3-1**. At all locations the rolling annual average of deposited dust (insoluble solids) remains below the criterion. The monthly deposited dust was below the annual average criterion of 4 g/m²/month at all locations except at DDG4-B sampled in Dec/Jan 2024 which measured 4.1 g/m²/month. The reason for the high deposited dust is unknown. However, it is important to note that prevailing winds during the monitoring period were predominantly from the east (Figure 3-6), suggesting that the Tarago railway station might have contributed to the higher measurement. No lead was measured above the detection limit (1 µg) at any monitoring location.

Upon commissioning the program, the DDG4 sample (Mulwaree Street) was moved to a different location (i.e. DDG4-B). As a result, it was only exposed for one week during the initial monitoring month. These data were incorporated into the averaging process in the following month.

Table 3-1: Measured lead content in deposited dust and deposited dust at four properties around Tarago, NSW

Month	DDG1, Stewart St		DDG2, Station Masters Cottage		DDG3, Boyd St		DDG4-B, Mulwaree St	
	Lead (µg)	Insoluble solids (g/m ² /month)	Lead (µg)	Insoluble solids (g/m ² /month)	Lead (µg)	Insoluble solids (g/m ² /month)	Lead (µg)	Insoluble solids (g/m ² /month)
Oct/Nov 2022	<1	0.3	<1	0.5	<1	1.2	^a N/A	
Nov/Dec 2022	<1	0.9	<1	1.3	<1	2.2	<1	2.2
Dec/Jan 2023	<1	<0.1	<1	0.3	<1	1.2	<1	4.7
Jan/Feb 2023	<1	0.4	<1	0.5	<1	0.7	<1	0.7
Feb/Mar 2023	<1	0.9	<1	1.5	<1	1.1	<1	0.7
Jun/Jul 2023	<1	0.1	<1	0.3	<1	0.1	<1	0.4
Jul/Aug 2023	<1	0.3	<1	0.9	<1	0.6	<1	0.9
Aug/Sep 2023	<1	0.2	<1	0.3	<1	0.2	<1	0.2
Sep/Oct 2023	<1	1	<1	0.9	<1	1.1	<1	0.2
Dec/Jan 2024	<1	0.1	<1	0.4	<1	1.9	<1	4.1
Jan/Feb 2024	<1	1	<1	0.8	<1	0.9	<1	1
Feb/Mar 2024	<1	0.9	<1	0.6	<1	0.4	<1	0.3
Rolling annual average	<1	0.5	<1	0.7	<1	1.0	<1	1.4

Limit of reporting = 1 µg for lead and 0.1 g/m²/month for insoluble solids

^a Averaged in next report (short exposure period during November)

3.2 TSP and lead

Lead was detected in all TSP samples collected since program commissioning in October 2022. In all cases, the concentrations were below the annual average criterion for lead (**Figure 3-2**); similarly, TSP measured during the period was below the annual average criterion (**Figure 3-1**). Correlation between TSP and lead in the same sample is weak, as shown in **Figure 3-3**.

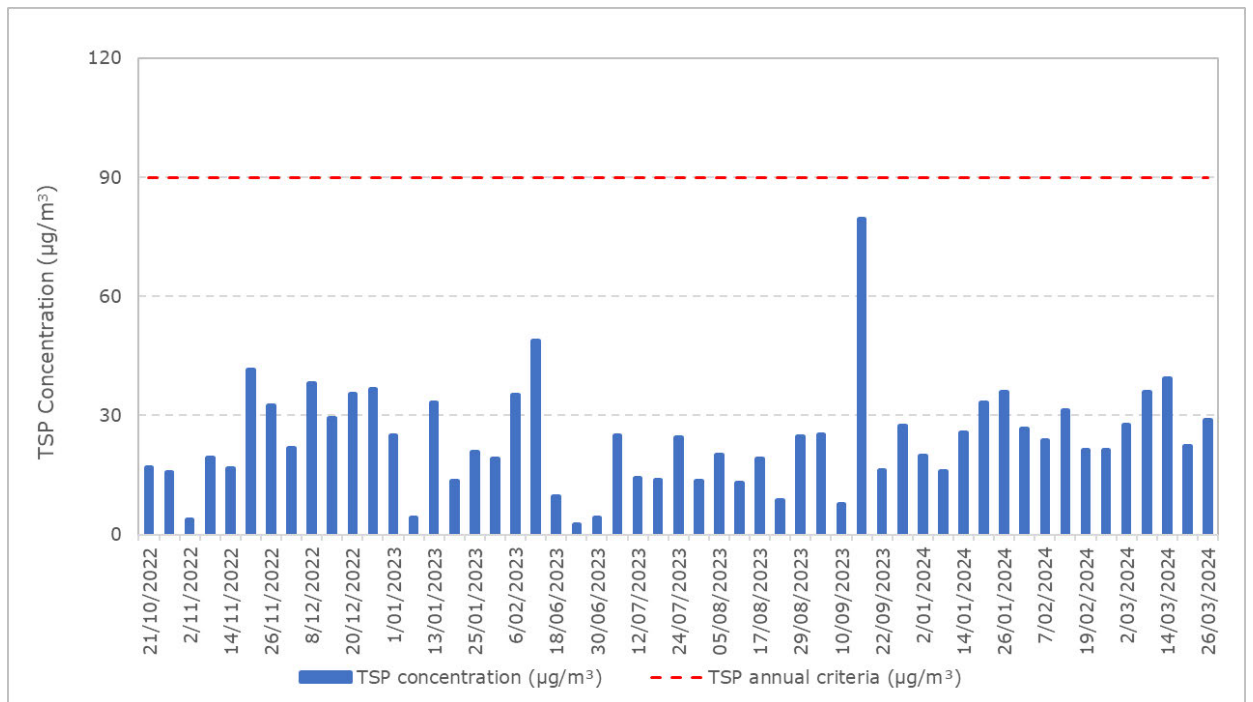


Figure 3-1: Measured 24-hour average TSP concentrations, one day in six since program commissioning

Note. Monitoring was temporarily paused from April to May and recommenced in June.

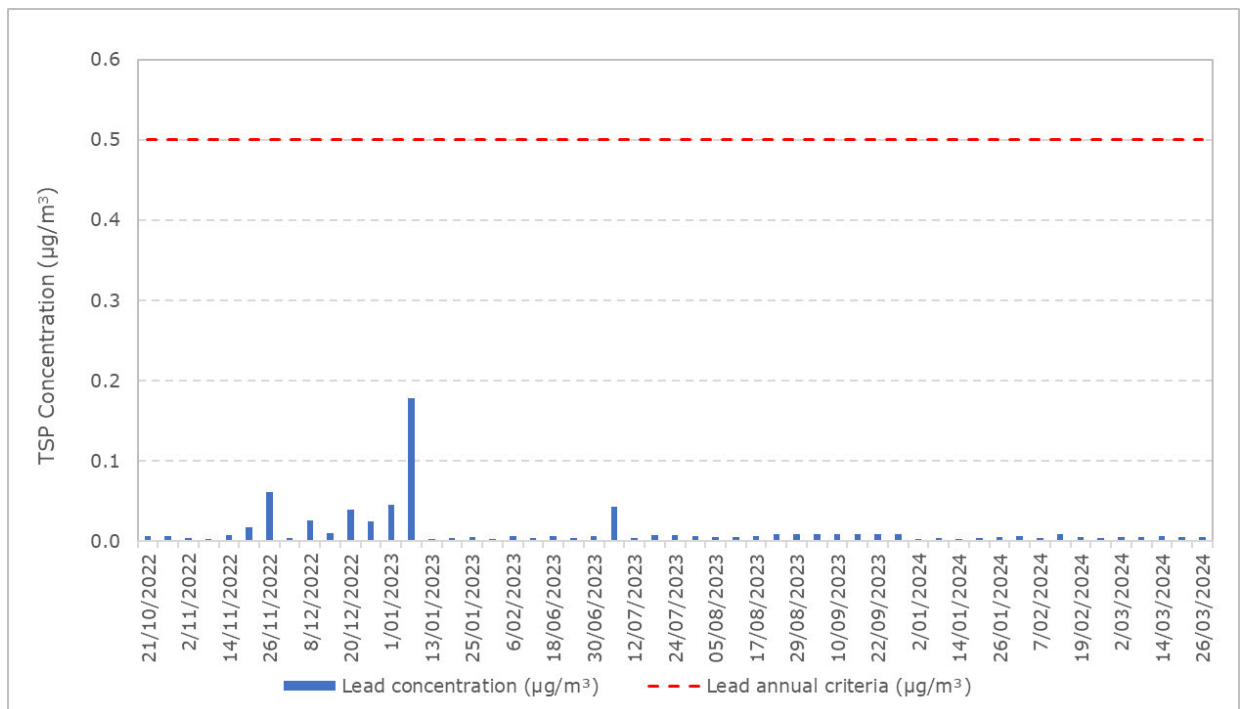


Figure 3-2: Measured 24-hour average lead concentrations, one day in six since program commissioning

Note. Monitoring was temporarily paused from April to May and recommenced in June.

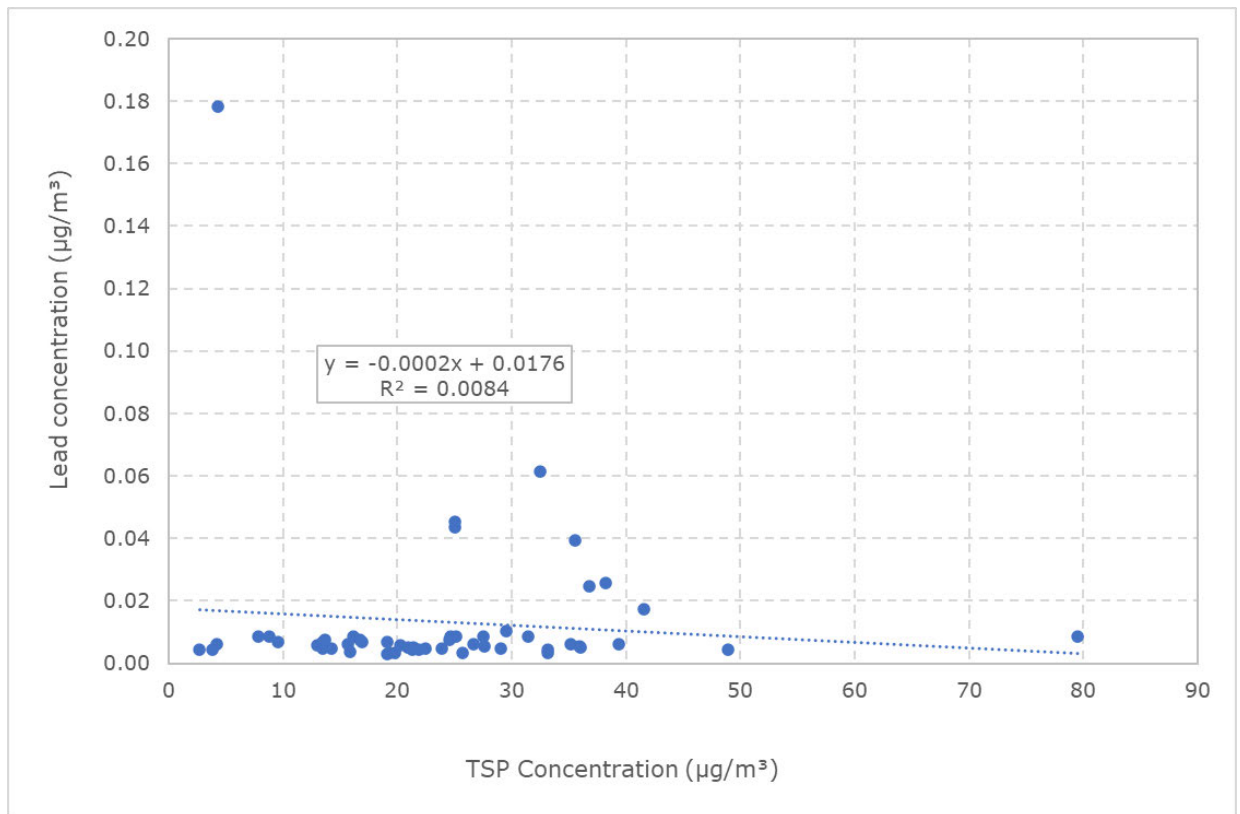


Figure 3-3: Correlation between 24-hour average TSP concentrations and lead concentrations from the same sample, one day in six since program commissioning

Note. Monitoring was temporarily paused from April to May and recommenced in June.

3.3 Regional meteorological monitoring

Rainfall contributes to suppressing dust. Total daily rainfall measured in Goulburn since program commissioning in October 2022 is presented in **Figure 3-4**. December 2023 to February 2024 had comparatively higher amounts of rainfall compared to the previous summer.

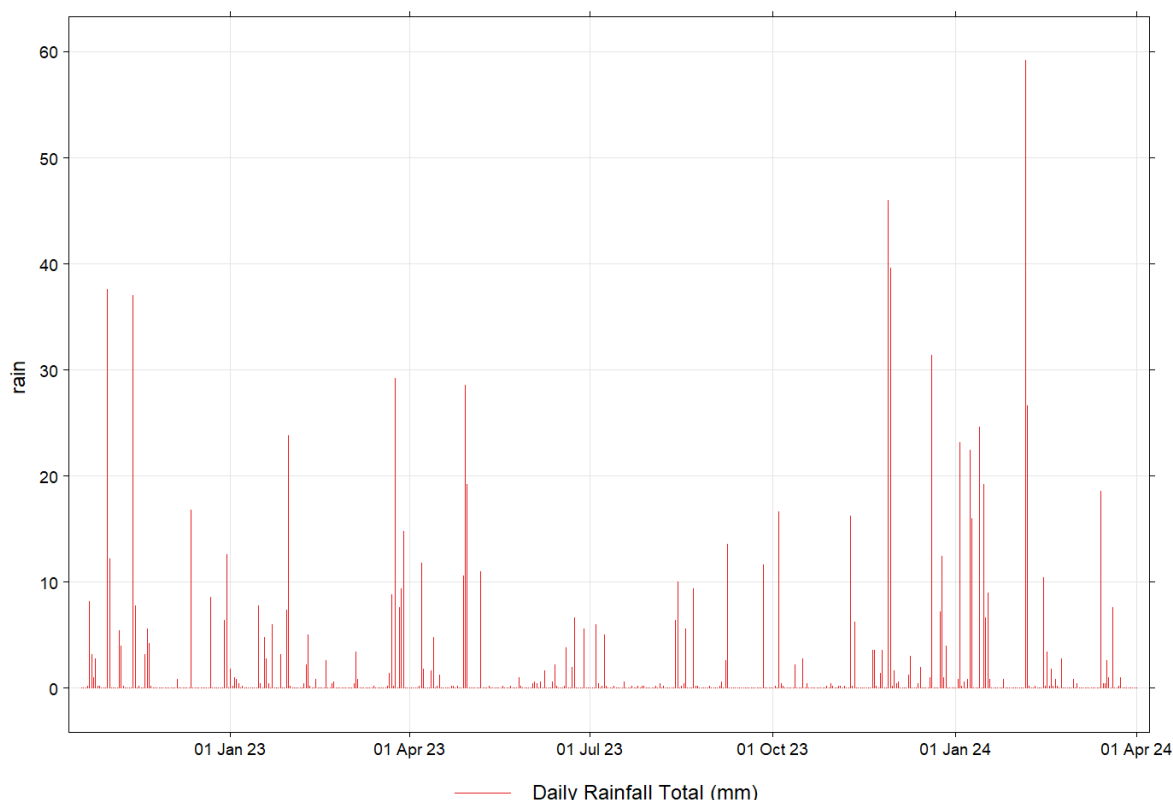


Figure 3-4: 24-hour total rainfall (mm) measured in Goulburn during the monitoring period

Analysis of monitored meteorological data indicates that regional winds during the monitoring period were predominantly from the west throughout most of the year besides in summer to early autumn (December to March) where wind were predominantly from the east (**Figure 3-5**). Winds ranged in speed, where the strongest winds of over 4 m/s prevailed from the west and east. Whilst strong winds can generate elevated concentrations of particulate matter through the wind erosion of sources, calm winds also have an important influence on pollutant dispersion in the atmosphere. Calm conditions can result in elevated concentrations of pollutants from low level fugitive sources near to the source. Over the entire monitoring period, calm winds of less than 2 m/s occurred evenly from the east and west. Analysis of the wind on the TSP and lead sampled days shows a similar pattern to the overall wind characteristics with higher occurrence of west to north-west winds (**Figure 3-7**).

Figure 3-8 shows the measured 24-hour average TSP and lead concentrations and the recorded prevailing winds on those days. Analysis of this plot suggests that most of the lead-containing TSP travelled with the prevailing westerly winds in the first two months. Comparatively higher lead concentrations were recorded in the third month (Dec/Jan 23) when prevailing winds were coming from the east. During June to August, westerly winds contributed to low levels of potentially lead-containing TSP. A peak in lead was observed in September 2023 when winds were coming from the west-northwest. 24-hour average lead and TSP remained low throughout the end of 2023 and into 2024.

The bivariate polar plot and pollution rose in **Figure 3-9** shows that the sample with highest lead concentration (07 January 2023) was from a day with regional winds coming from the south-east. Bivariate polar plot and pollution roses can be useful for source identification with longer dataset

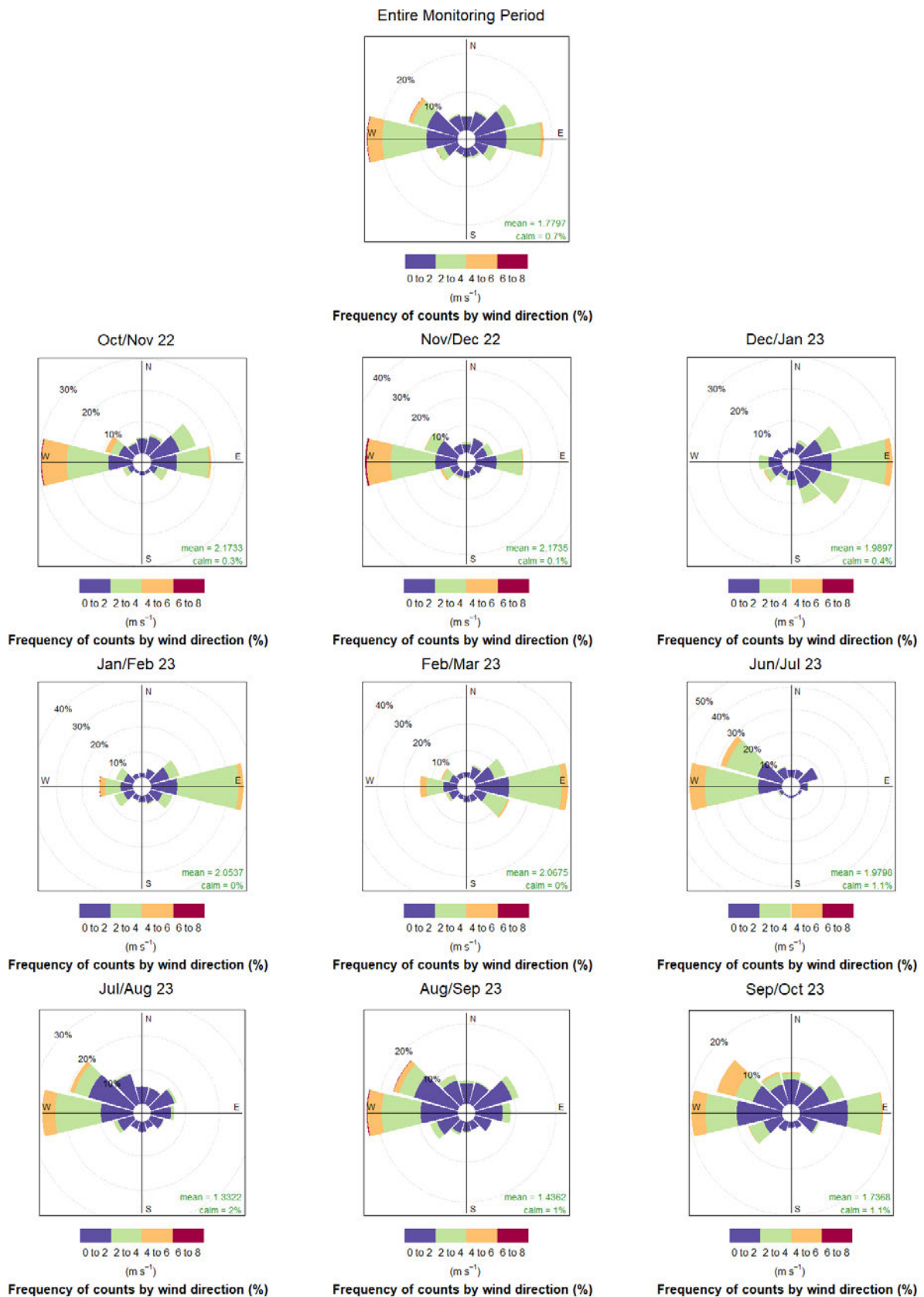


Figure 3-5: Wind roses with meteorological data from the entire monitoring period and monitoring months from October 2022 to October 2023

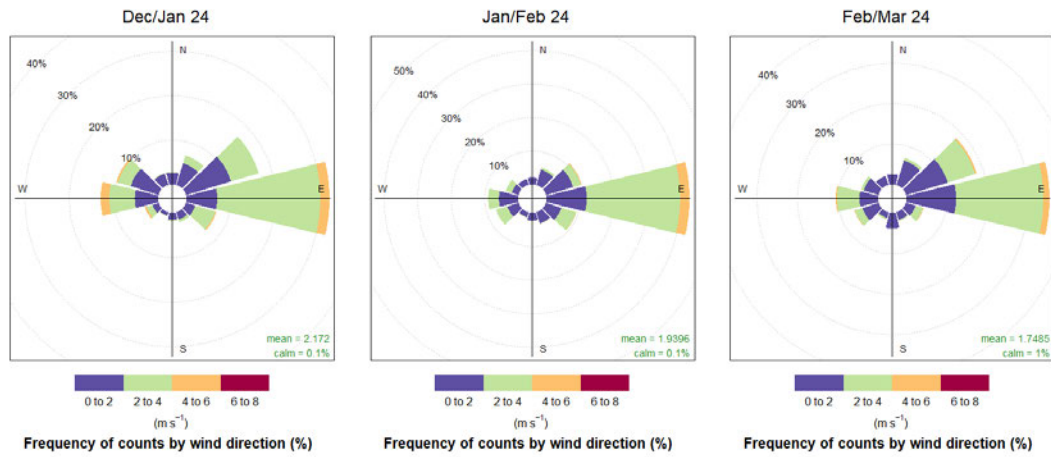


Figure 3-6: Wind roses with meteorological data for the monitoring months from December 2023 to March 2024

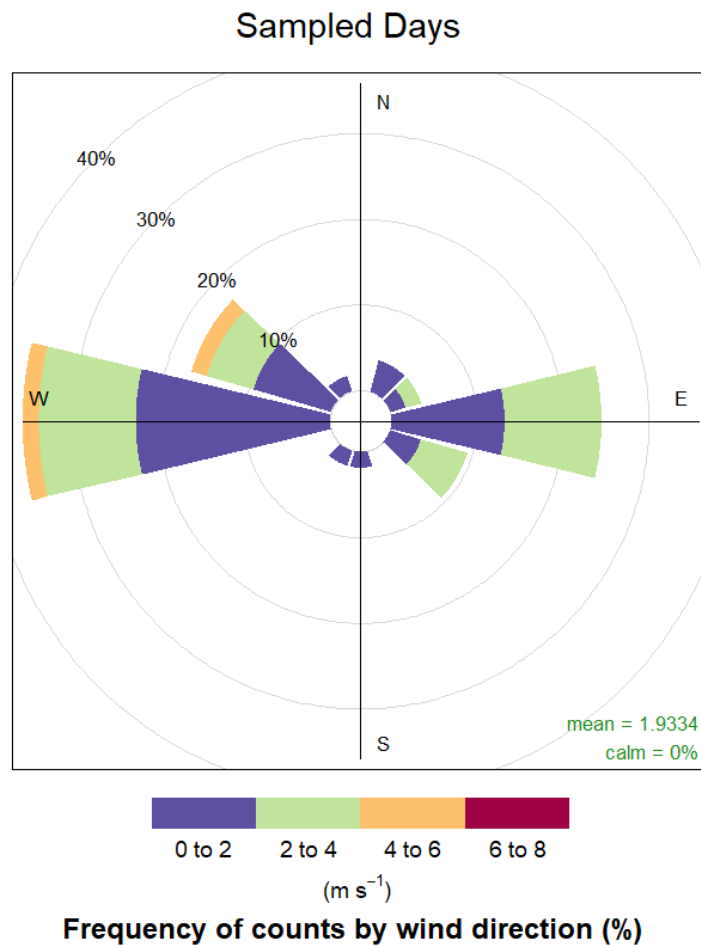


Figure 3-7: Wind rose with meteorological data from the TSP and lead sampled days

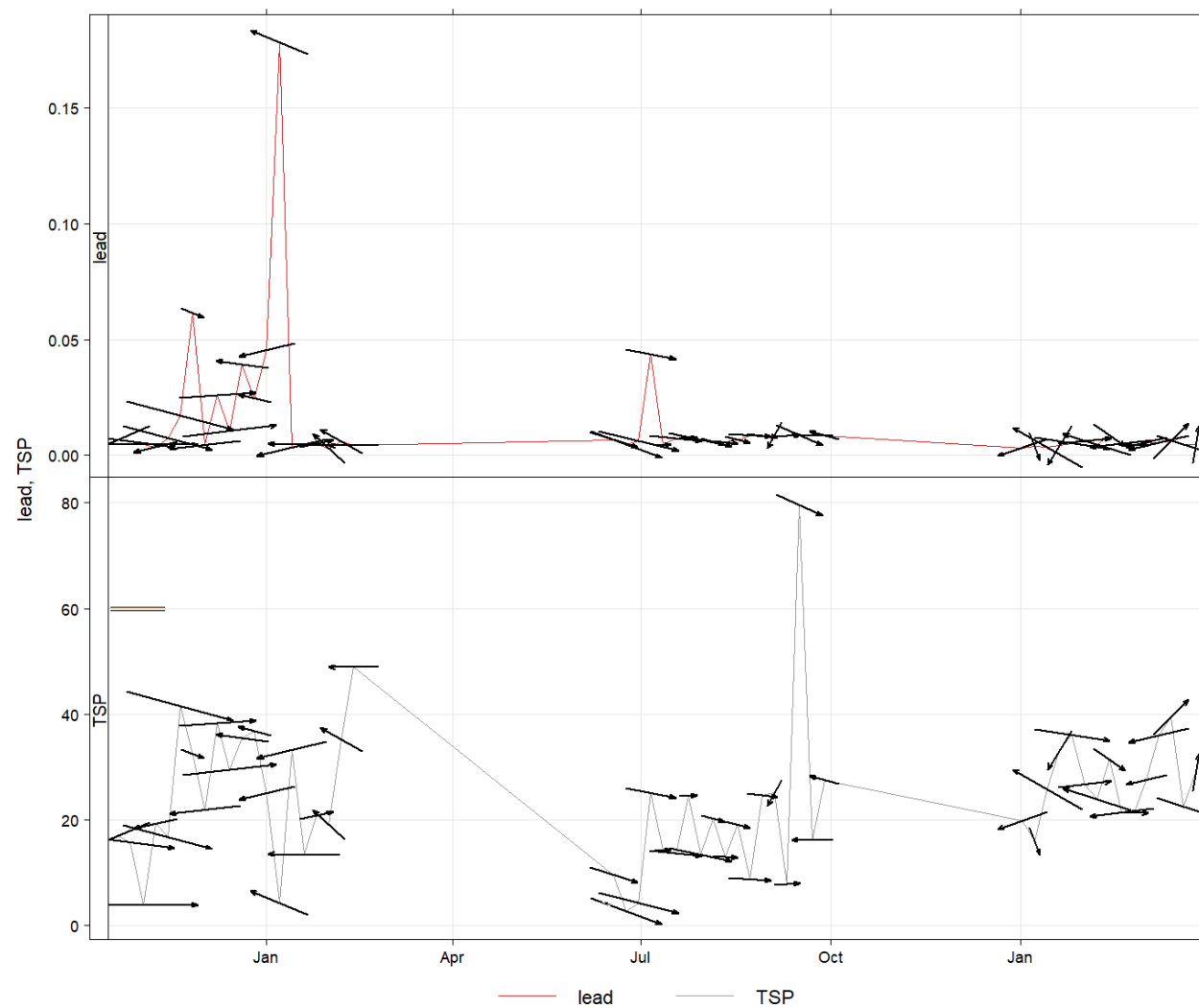


Figure 3-8: Measured 24-hour average TSP and lead concentrations and prevailing winds on the day

Note. Monitoring was temporarily paused from April to May and recommenced in June.

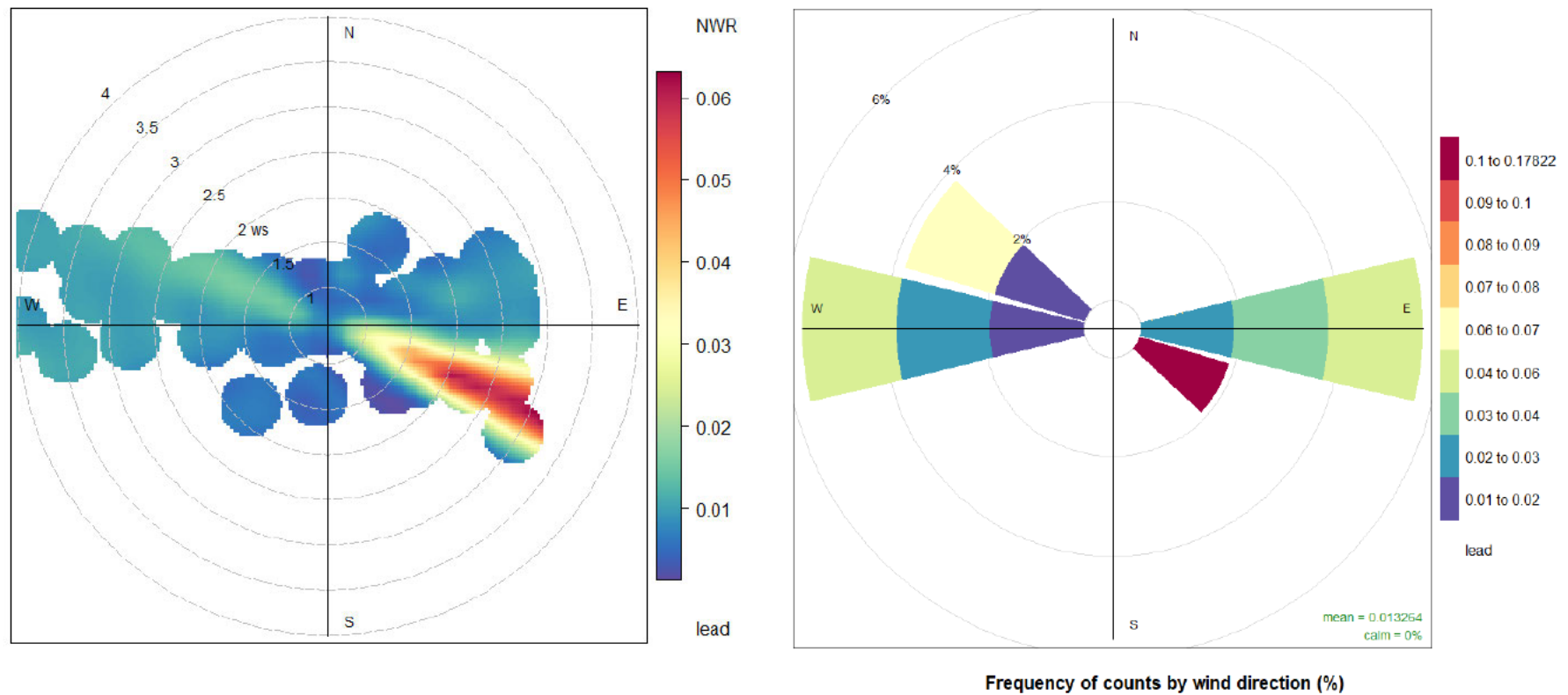


Figure 3-9: Polar plot (left) and pollution rose (right) showing 24-hour lead concentration and 24-hour average wind speed and direction for the TSP and lead sampled days

4. Summary

This report presents results of the air quality monitoring program in Tarago, NSW since program commissioning on 18 October 2022. The program consists of dust deposition monitoring at four locations and TSP and lead sampling by high-volume air sampler at one location.

No lead was detected in deposited dust above the limit of reporting. The rolling annual average concentrations of deposited dust as insoluble solids remain below the annual average dust deposition criterion at all locations. Lead was detected in all 24-hour average TSP samples, but in all cases the concentrations were below the annual average criterion.

Regional winds measured in Goulburn during the monitoring period prevailed from the east and west. Data collected to date suggests that lead-containing TSP originates from the west to west-northwest of the monitoring location, that is, the direction of the rail siding. However, the sample with highest lead concentration (07 January 2023) was from a day with regional winds coming from the south-east. Lead and particulate matter concentrations were below the relevant air quality criteria on all sampling days since the program was commissioned.

5. Limitations

This document is issued in confidence to TfNSW for the purposes of assessing air quality impacts from lead containing ore within the Goulburn – Bombala rail corridor in the Tarago Area. It should not be used for any other purpose.

The report must not be reproduced in whole or in part except with the prior consent of Ramboll Australia Pty Ltd and subject to inclusion of an acknowledgement of the source. No information as to the contents or subject matter of this document or any part thereof may be communicated in any manner to any third party without the prior consent of Ramboll Australia Pty Ltd.

Whilst reasonable attempts have been made to ensure that the contents of this report are accurate and complete at the time of writing, Ramboll Australia Pty Ltd disclaims any responsibility for loss or damage that may be occasioned directly or indirectly through the use of, or reliance on, the contents of this report.

6. References

- NEPC, 2021. National Environment Protection (Ambient Air Quality) Measure. National Environment Protection Council.
- NERDDC, 1988. Air Pollution from Surface Coal Mining: Measurement, Modelling and Community Perception, Project No. 921. National Energy Research Development and Demonstration Council, Canberra.
- NHMRC, 1996. Ambient Air Quality Goals Recommended by the National Health and Medical Research Council. National Health and Medical Research Council, Canberra.
- NSW EPA, 2022. Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales. NSW Environment Protection Authority, Parramatta NSW.
- Ramboll, 2021. Tarago Air Quality Monitoring Report (Report, Project no. 318000780).
- Ramboll, 2020. Tarago Lead Management Action Plan, prepared for previous client.
- Ramboll, 2022. Tarago Lead Management Action Plan, prepared for Transport for NSW, December 2022.
- Standards Australia, Standards New Zealand, 2016a. AS/NZS 3580.1.1:2016 Methods for sampling and analysis of ambient air Guide to siting air monitoring equipment. Australian/New Zealand Standard.
- Standards Australia, Standards New Zealand, 2016b. AS/NZS 3580.10.1:2016 Methods for sampling and analysis of ambient air Determination of particulate matter - Deposited matter - Gravimetric method. Australian/New Zealand Standard.
- Standards Australia, Standards New Zealand, 2014. AS/NZS 3580.9.15:2014 Methods for sampling and analysis of ambient air Method 9.15: Determination of suspended particulate matter — Particulate metals high or low volume sampler gravimetric collection — Inductively coupled plasma (ICP) spectrometric method. Australian/New Zealand Standard.

Appendix 1

Images of Air Quality Monitoring Instruments in-Situ



Figure A: Dust deposition gauge DDG2 and high-volume air sampler at Station Masters Cottage, 106 Goulburn St, Tarago NSW

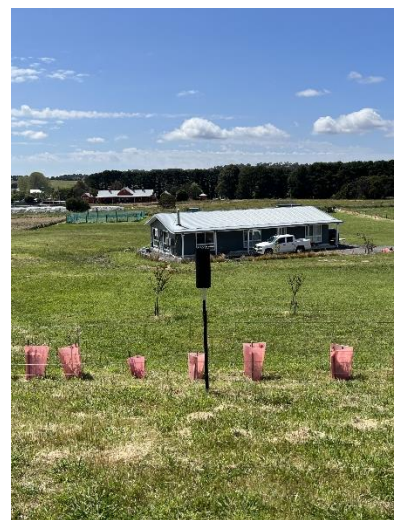


Figure B: Dust deposition gauge DDG1, 18 Stewart St, Tarago NSW; DDG3, Boyd St, Tarago NSW; and DDG4, 96 Mulwaree St, Tarago NSW

Appendix 2 Laboratory Reports

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



NATA Accredited
Accreditation Number 1261
Site Number 1254

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: Stephen Maxwell

Report 1020643-A
Project name TARAGO AQM
Project ID 318001376-007
Received Date Aug 25, 2023

Client Sample ID			HVS 3018	HVS 3014	HVS 2019	HVS 2008
Sample Matrix			Filter paper	Filter paper	Filter paper	Filter paper
Eurofins Sample No.			S23- Au0069666	S23- Au0069667	S23- Au0069668	S23- Au0069669
Date Sampled			Aug 23, 2023	Aug 17, 2023	Aug 11, 2023	Aug 05, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	14	11	9.3	9.4
Particulates - Final weighing	0.01	mg	2771.8	2713.2	2699.9	2715.1
Particulates - Initial weighing	0.01	mg	2757.5	2682.1	2678.7	2682.2

Client Sample ID			HVS 2026	HVS 2041	HVS2052	HVS2034
Sample Matrix			Filter paper	Filter paper	Filter paper	Filter paper
Eurofins Sample No.			S23- Au0069670	S23- Au0069671	S23- Au0069672	S23- Au0069673
Date Sampled			Jul 30, 2023	Jul 24, 2023	Jul 18, 2023	Jul 12, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	11	12	12	7.5
Particulates - Final weighing	0.01	mg	2695.3	2735.7	2704.8	2729.9
Particulates - Initial weighing	0.01	mg	2673.4	2695.8	2682.5	2706.7

Client Sample ID			HVS 2040	HVS 1956	HVS 1970	HVS 1969
Sample Matrix			Filter paper	Filter paper	Filter paper	Filter paper
Eurofins Sample No.			S23- Au0069674	S23- Au0069675	S23- Au0069676	S23- Au0069677
Date Sampled			Jul 06, 2023	Jun 30, 2023	Jun 24, 2023	Jun 18, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	71	10	7.4	11
Particulates - Final weighing	0.01	mg	2747.9	2690.3	2669	2690.7
Particulates - Initial weighing	0.01	mg	2707.1	2683.4	2664.6	2675.1

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 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Aug 30, 2023	28 Days
Particulates - Final weighing - Method: Filters weighed according to AS 3640 (Inhalable), AS 2985 (Respirable), AS4323.3 (Stack Filters)	Field	Aug 28, 2023	30 Days
Particulates - Initial weighing - Method: Filters weighed according to AS 3640 (Inhalable), AS 2985 (Respirable), AS4323.3 (Stack Filters) & QS-INS-4033 (HVAS - Non NATA Endorsed).	Field	Aug 28, 2023	30 Days



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

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

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

Tauranga
1277 Cameron Road,
Gate Pa,
Tauranga 3112
Tel: +64 9 525 0568
IANZ# 1402

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

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

Project Name: TARAGO AQM
Project ID: 318001376-007

Order No.: 318001376-007
Report #: 1020643
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Aug 25, 2023 1:31 PM
Due: Sep 1, 2023
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail

Lead

Particulates - Final weighing

Particulates - Initial weighing

Melbourne Laboratory - NATA # 1261 Site # 1254

External Laboratory

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	HVS 3018	Aug 23, 2023		Filter paper	S23-Au0069666	X	X	X
2	HVS 3014	Aug 17, 2023		Filter paper	S23-Au0069667	X	X	X
3	HVS 2019	Aug 11, 2023		Filter paper	S23-Au0069668	X	X	X
4	HVS 2008	Aug 05, 2023		Filter paper	S23-Au0069669	X	X	X
5	HVS 2026	Jul 30, 2023		Filter paper	S23-Au0069670	X	X	X
6	HVS 2041	Jul 24, 2023		Filter paper	S23-Au0069671	X	X	X
7	HVS2052	Jul 18, 2023		Filter paper	S23-Au0069672	X	X	X
8	HVS2034	Jul 12, 2023		Filter paper	S23-Au0069673	X	X	X
9	HVS 2040	Jul 06, 2023		Filter paper	S23-Au0069674	X	X	X
10	HVS 1956	Jun 30, 2023		Filter paper	S23-Au0069675	X	X	X
11	HVS 1970	Jun 24, 2023		Filter paper	S23-Au0069676	X	X	X
12	HVS 1969	Jun 18, 2023		Filter paper	S23-Au0069677	X	X	X
Test Counts						12	12	12

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 (<i>bis</i> -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.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Lead	Total ug	< 1			1	Pass	

Comments
Sample Integrity

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

Authorised by:

Andrew Black
Mary Makarios

Analytical Services Manager
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 shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

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: **Stephen Maxwell**

Report **1020854-A**
Project name **TARAGO AQM**
Project ID **318001376-007**
Received Date **Aug 25, 2023**

Client Sample ID			DDG1 - STEWART STREET	DDG2 - SMC	DDG3 - BOYD STREET	DDG4 - MULWAREE STREET
Sample Matrix			Dust Deposition	Dust Deposition	Dust Deposition	Dust Deposition
Eurofins Sample No.			S23-Au0071835	S23-Au0071836	S23-Au0071837	S23-Au0071838
Date Sampled			Aug 10, 2023	Aug 10, 2023	Aug 10, 2023	Aug 10, 2023
Test/Reference	LOR	Unit				
Dust Deposition						
Combustible Solids	0.1	g/m2/mth	0.1	0.3	0.2	0.3
Soluble Solids	0.1	g/m2/mth	1.9	0.2	0.1	1.1
Total Solids Dried at 103 °C to 105 °C	0.1	g/m2/mth	2.2	1.1	0.7	1.9
Volume (total)*	0.1	mL	200	200	200	200
Ash*	0.1	g/m2/mth	0.2	0.6	0.4	0.6
Insoluble Solids	0.1	g/m2/mth	0.3	0.9	0.6	0.9
Heavy Metals						
Lead	1	Total ug	< 1	< 1	< 1	< 1

Client Sample ID			DDG1 - STEWART STREET	DDG2 - SMC	DDG3 - BOYD STREET	DDG4 - MULWAREE STREET
Sample Matrix			Dust Deposition	Dust Deposition	Dust Deposition	Dust Deposition
Eurofins Sample No.			S23-Au0071839	S23-Au0071840	S23-Au0071841	S23-Au0071842
Date Sampled			Jul 13, 2023	Jul 13, 2023	Jul 13, 2023	Jul 13, 2023
Test/Reference	LOR	Unit				
Dust Deposition						
Combustible Solids	0.1	g/m2/mth	< 0.1	0.1	< 0.1	0.1
Soluble Solids	0.1	g/m2/mth	3.4	3.2	3.2	3.3
Total Solids Dried at 103 °C to 105 °C	0.1	g/m2/mth	3.5	3.5	3.3	3.7
Volume (total)*	0.1	mL	500	400	450	400
Ash*	0.1	g/m2/mth	< 0.1	0.1	< 0.1	0.2
Insoluble Solids	0.1	g/m2/mth	< 0.1	0.3	0.1	0.4
Heavy Metals						
Lead	1	Total ug	< 1	< 1	< 1	< 1

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**Dust Deposition**

- Method: LTM-INO-4160 Determination of Dust Deposition of Ambient Air

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Testing Site

Sydney

Sydney

Extracted

Aug 29, 2023

Sep 07, 2023

Holding Time

5 Days

28 Days

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

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

Auckland	Christchurch	Tauranga
35 O'Rorke Road Penrose, Auckland 1061 Tel: +64 9 526 4551 IANZ# 1327	43 Detroit Drive Rolleston, Christchurch 7675 Tel: +64 3 343 5201 IANZ# 1290	1277 Cameron Road, Gate Pa, Tauranga 3112 Tel: +64 9 525 0568 IANZ# 1402

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

Project Name: TARAGO AQM
Project ID: 318001376-007

Order No.: 318001376-007
Report #: 1020854
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Aug 25, 2023 1:31 PM
Due: Sep 1, 2023
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Dust Deposition
Sydney Laboratory - NATA # 1261 Site # 18217						X
External Laboratory						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	
1	DDG1 - STEWART STREET	Aug 10, 2023		Dust Deposition	S23-Au0071835	X
2	DDG2 - SMC	Aug 10, 2023		Dust Deposition	S23-Au0071836	X
3	DDG3 - BOYD STREET	Aug 10, 2023		Dust Deposition	S23-Au0071837	X
4	DDG4 - MULWAREE STREET	Aug 10, 2023		Dust Deposition	S23-Au0071838	X
5	DDG1 - STEWART STREET	Jul 13, 2023		Dust Deposition	S23-Au0071839	X
6	DDG2 - SMC	Jul 13, 2023		Dust Deposition	S23-Au0071840	X
7	DDG3 - BOYD	Jul 13, 2023		Dust	S23-Au0071841	X



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

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

Auckland	Christchurch	Tauranga
35 O'Rorke Road Penrose, Auckland 1061 Tel: +64 9 526 4551 IANZ# 1327	43 Detroit Drive Rolleston, Christchurch 7675 Tel: +64 3 343 5201 IANZ# 1290	1277 Cameron Road, Gate Pa, Tauranga 3112 Tel: +64 9 525 0568 IANZ# 1402

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

Project Name: TARAGO AQM
Project ID: 318001376-007

Order No.: 318001376-007
Report #: 1020854
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Aug 25, 2023 1:31 PM
Due: Sep 1, 2023
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail

Dust Deposition

Sydney Laboratory - NATA # 1261 Site # 18217

X

	STREET			Deposition		
8	DDG4 - MULWAREE STREET	Jul 13, 2023		Dust Deposition	S23-Au0071842	X

Test Counts

8

Internal Quality Control Review and Glossary

General

- 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.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
- 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 (<i>bis</i> -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

- 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.
- 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.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments
Sample Integrity

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

Authorised by:

Adam Bateup	Analytical Services Manager
Dilani Samarakoon	Senior Analyst-Inorganic
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](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

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



NATA Accredited
Accreditation Number 1261
Site Number 1254

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: **Stephen Maxwell**

Report **1032595-A**
Project name **TARAGO AQM**
Project ID **3180001376-007**
Received Date **Oct 06, 2023**

Client Sample ID			HVS3026	HVS2094	HVS2080	HVS3050
Sample Matrix			Filter paper	Filter paper	Filter paper	Filter paper
Eurofins Sample No.			S23- Oc0014488	S23- Oc0014489	S23- Oc0014490	S23- Oc0014491
Date Sampled			Aug 29, 2023	Sep 04, 2023	Sep 10, 2023	Sep 16, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	5.2	5.2	4.2	5.4
Particulates - Final weighing	0.01	mg	2801.8	2723.1	2722.5	2901.3
Particulates - Initial weighing	0.01	mg	2761.7	2682.2	2709.8	2771.9

Client Sample ID			HVS3009	HVS3055
Sample Matrix			Filter paper	Filter paper
Eurofins Sample No.			S23- Oc0014492	S23- Oc0014493
Date Sampled			Sep 22, 2023	Sep 28, 2023
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	1	Total ug	3.4	7.7
Particulates - Final weighing	0.01	mg	2702.5	2808.4
Particulates - Initial weighing	0.01	mg	2676.2	2763.6

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 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Oct 07, 2023	28 Days
Particulates - Final weighing - Method: Filters weighed according to AS 3640 (Inhalable), AS 2985 (Respirable), AS4323.3 (Stack Filters)	Field	Oct 07, 2023	30 Days
Particulates - Initial weighing - Method: Filters weighed according to AS 3640 (Inhalable), AS 2985 (Respirable), AS4323.3 (Stack Filters) & QS-INS-4033 (HVAS - Non NATA Endorsed).	Field	Oct 07, 2023	30 Days



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

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

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

Tauranga
1277 Cameron Road,
Gate Pa,
Tauranga 3112
Tel: +64 9 525 0568
IANZ# 1402

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

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

Project Name: TARAGO AQM
Project ID: 3180001376-007

Order No.:
Report #: 1032595
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Oct 6, 2023 6:32 PM
Due: Oct 13, 2023
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail

Lead

Particulates - Final weighing

Particulates - Initial weighing

Melbourne Laboratory - NATA # 1261 Site # 1254

External Laboratory

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	HVS3026	Aug 29, 2023		Filter paper	S23-Oc0014488	X	X	X
2	HVS2094	Sep 04, 2023		Filter paper	S23-Oc0014489	X	X	X
3	HVS2080	Sep 10, 2023		Filter paper	S23-Oc0014490	X	X	X
4	HVS3050	Sep 16, 2023		Filter paper	S23-Oc0014491	X	X	X
5	HVS3009	Sep 22, 2023		Filter paper	S23-Oc0014492	X	X	X
6	HVS3055	Sep 28, 2023		Filter paper	S23-Oc0014493	X	X	X

Test Counts

6

6

6

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 (<i>bis</i> -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.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Lead	Total ug	< 1			1	Pass	

Comments
Sample Integrity

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

Authorised by:

Andrew Black
Emily Rosenberg

Analytical Services Manager
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 shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

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: **Stephen Maxwell**

Report **1032617-A**
Project name **Tarago AQM**
Project ID **318001376-007**
Received Date **Oct 09, 2023**

Client Sample ID			DDG 1 - Stewart Street	DDG2 - SMC	DDG3 - Boyd Street	DDG4 - Mulwaree Street
Sample Matrix			Dust Deposition	Dust Deposition	Dust Deposition	Dust Deposition
Eurofins Sample No.			S23- Oc0014633	S23- Oc0014634	S23- Oc0014635	S23- Oc0014636
Date Sampled			Sep 07, 2023	Sep 07, 2023	Sep 07, 2023	Sep 07, 2023
Test/Reference	LOR	Unit				
Dust Deposition						
Combustible Solids	0.1	g/m2/mth	< 0.1	< 0.1	< 0.1	< 0.1
Soluble Solids	0.1	g/m2/mth	1.2	2.6	3.8	1.6
Total Solids Dried at 103 °C to 105 °C	0.1	g/m2/mth	1.4	2.8	4.0	1.8
Volume (total)*	0.1	mL	630	670	600	530
Ash*	0.1	g/m2/mth	0.2	0.2	0.1	0.1
Insoluble Solids	0.1	g/m2/mth	0.2	0.3	0.2	0.2
Heavy Metals						
Lead	1	Total ug	< 1	< 1	< 1	< 1

Client Sample ID			DDG 1 - Stewart Street	DDG2 - SMC	DDG3 - Boyd Street	DDG4 - Mulwaree Street
Sample Matrix			Dust Deposition	Dust Deposition	Dust Deposition	Dust Deposition
Eurofins Sample No.			S23- Oc0014637	S23- Oc0014638	S23- Oc0014639	S23- Oc0014640
Date Sampled			Oct 05, 2023	Oct 05, 2023	Oct 05, 2023	Oct 05, 2023
Test/Reference	LOR	Unit				
Dust Deposition						
Combustible Solids	0.1	g/m2/mth	0.2	0.2	0.2	< 0.1
Soluble Solids	0.1	g/m2/mth	1.2	1.8	< 0.1	0.8
Total Solids Dried at 103 °C to 105 °C	0.1	g/m2/mth	2.3	2.7	1.1	1.1
Volume (total)*	0.1	mL	480	380	410	350
Ash*	0.1	g/m2/mth	0.8	0.6	0.9	0.2
Insoluble Solids	0.1	g/m2/mth	1.0	0.9	1.1	0.2
Heavy Metals						
Lead	1	Total ug	< 1	< 1	< 1	< 1

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**Dust Deposition**

- Method: LTM-INO-4160 Determination of Dust Deposition of Ambient Air

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Testing Site

Sydney

Sydney

Extracted

Oct 09, 2023

Oct 09, 2023

Holding Time

5 Days

28 Days

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

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

Auckland	Christchurch	Tauranga
35 O'Rorke Road Penrose, Auckland 1061 Tel: +64 9 526 4551 IANZ# 1327	43 Detroit Drive Rolleston, Christchurch 7675 Tel: +64 3 343 5201 IANZ# 1290	1277 Cameron Road, Gate Pa, Tauranga 3112 Tel: +64 9 525 0568 IANZ# 1402

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

Project Name: Tarago AQM
Project ID: 318001376-007

Order No.: 318001376-007
Report #: 1032617
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Oct 9, 2023 8:47 AM
Due: Oct 16, 2023
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Dust Deposition
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	DDG 1 - Stewart Street	Sep 07, 2023		Dust Deposition	S23-Oc0014633	X	X
2	DDG2 - SMC	Sep 07, 2023		Dust Deposition	S23-Oc0014634	X	X
3	DDG3 - Boyd Street	Sep 07, 2023		Dust Deposition	S23-Oc0014635	X	X
4	DDG4 - Mulwaree Street	Sep 07, 2023		Dust Deposition	S23-Oc0014636	X	X
5	DDG 1 - Stewart Street	Oct 05, 2023		Dust Deposition	S23-Oc0014637	X	X
6	DDG2 - SMC	Oct 05, 2023		Dust Deposition	S23-Oc0014638	X	X
7	DDG3 - Boyd Street	Oct 05, 2023		Dust Deposition	S23-Oc0014639	X	X
8	DDG4 -	Oct 05, 2023		Dust	S23-Oc0014640	X	X



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

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road Dandenong South VIC 3175 Tel: +61 3 8564 5000 NATA# 1261 Site# 1254	19/8 Lewalan Street Grovedale VIC 3216 Tel: +61 3 8564 5000 NATA# 1261 Site# 25403	179 Magowar Road Girraween NSW 2145 Tel: +61 2 9900 8400 NATA# 1261 Site# 18217	Unit 1,2 Dacre Street Mitchell ACT 2911 Tel: +61 2 6113 8091 NATA# 1261 Site# 25466	1/21 Smallwood Place Murarrie QLD 4172 Tel: +61 7 3902 4600 NATA# 1261 Site# 20794	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	Christchurch	Tauranga
35 O'Rourke Road Penrose, Auckland 1061 Tel: +64 9 526 4551 IANZ# 1327	43 Detroit Drive Rolleston, Christchurch 7675 Tel: +64 3 343 5201 IANZ# 1290	1277 Cameron Road, Gate Pa, Tauranga 3112 Tel: +64 9 525 0568 IANZ# 1402

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

Project Name: Tarago AQM
Project ID: 318001376-007

Order No.: 318001376-007
Report #: 1032617
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Oct 9, 2023 8:47 AM
Due: Oct 16, 2023
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail					Lead	Dust Deposition
Sydney Laboratory - NATA # 1261 Site # 18217					X	X
	Mulwaree Street			Deposition		
Test Counts					8	8

Internal Quality Control Review and Glossary

General

- 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.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
- 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 (<i>bis</i> -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

- 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.
- 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.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Lead	S23-Oc0014640	CP	%	101			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			
Lead	S23-Oc0014633	CP	Total ug	< 1	< 1	<1	30%	Pass	

Comments
Sample Integrity

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

Authorised by:

Andrew Black	Analytical Services Manager
Fang Yee Tan	Senior Analyst-Metal
Ryan Phillips	Senior Analyst-Inorganic



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 shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

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



NATA Accredited
Accreditation Number 1261
Site Number 1254

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: Stephen Maxwell

Report 1084029-A
Project name TARAGO AQM
Project ID 318001376-007
Received Date Apr 03, 2024

Client Sample ID			HVS3204	HVS3105	HVS3234	HVS3297
Sample Matrix			Filter paper	Filter paper	Filter paper	Filter paper
Eurofins Sample No.			S24- Ap0006762	S24- Ap0006763	S24- Ap0006764	S24- Ap0006765
Date Sampled			Jan 02, 2024	Jan 08, 2024	Jan 14, 2024	Jan 20, 2024
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	5.4	6.1	5.5	6.9
Particulates - Final weighing	0.01	mg	2787.4	2746.3	2796.1	2701.5
Particulates - Initial weighing	0.01	mg	2755.2	2720.4	2754.2	2647.5

Client Sample ID			HVS3253	HVS3258	HVS3308	HVS3289
Sample Matrix			Filter paper	Filter paper	Filter paper	Filter paper
Eurofins Sample No.			S24- Ap0006766	S24- Ap0006767	S24- Ap0006768	S24- Ap0006769
Date Sampled			Jan 26, 2024	Feb 01, 2024	Feb 07, 2024	Feb 13, 2024
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	8.4	10	7.6	14
Particulates - Final weighing	0.01	mg	2829.2	2814.8	2686.4	2702.0
Particulates - Initial weighing	0.01	mg	2770.5	2771.4	2647.5	2650.9

Client Sample ID			HVS3273	HVS3279	HVS3268	HVS3359
Sample Matrix			Filter paper	Filter paper	Filter paper	Filter paper
Eurofins Sample No.			S24- Ap0006770	S24- Ap0006771	S24- Ap0006772	S24- Ap0006773
Date Sampled			Feb 19, 2024	Feb 25, 2024	Mar 02, 2024	Mar 08, 2024
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	8.2	7.3	9.1	8.7
Particulates - Final weighing	0.01	mg	2698.5	2691	2694.1	2707.4
Particulates - Initial weighing	0.01	mg	2663.7	2656.3	2649.2	2648.9

Client Sample ID			HVS3355	HVS3321	HVS3344
Sample Matrix			Filter paper	Filter paper	Filter paper
Eurofins Sample No.			S24- Ap0006774	S24- Ap0006775	S24- Ap0006776
Date Sampled			Mar 14, 2024	Mar 20, 2024	Mar 26, 2024
Test/Reference	LOR	Unit			
Heavy Metals					
Lead	1	Total ug	10	7.9	7.7
Particulates - Final weighing	0.01	mg	2709.6	2686.6	2693.0
Particulates - Initial weighing	0.01	mg	2645.5	2650.1	2645.8

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 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Apr 09, 2024	28 Days
Particulates - Final weighing - Method: Filters weighed according to AS 3640 (Inhalable), AS 2985 (Respirable), AS4323.3 (Stack Filters)	Field	Apr 04, 2024	30 Days
Particulates - Initial weighing - Method: Filters weighed according to AS 3640 (Inhalable), AS 2985 (Respirable), AS4323.3 (Stack Filters) & QS-INS-4033 (HVAS - Non NATA Endorsed).	Field	Apr 04, 2024	30 Days



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

ABN: 50 005 085 521

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

ABN: 91 05 0159 898

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

NZBN: 9429046024954

Auckland 35 O'Rorke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Auckland (Asb) Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	Tauranga 1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402
---	--	--	--

Company Name:	Ramboll Australia Pty Ltd	Order No.:	318001376-007	Received:	Apr 3, 2024 4:48 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	1084029	Due:	Apr 10, 2024
		Phone:	02 9954 8118	Priority:	5 Day
		Fax:	02 9954 8150	Contact Name:	Stephen Maxwell
Project Name:	TARAGO AQM				
Project ID:	318001376-007				

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Particulates - Final weighing	Particulates - Initial weighing
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	HVS3204	Jan 02, 2024		Filter paper	S24-Ap0006762	X	X	X
2	HVS3105	Jan 08, 2024		Filter paper	S24-Ap0006763	X	X	X
3	HVS3234	Jan 14, 2024		Filter paper	S24-Ap0006764	X	X	X
4	HVS3297	Jan 20, 2024		Filter paper	S24-Ap0006765	X	X	X
5	HVS3253	Jan 26, 2024		Filter paper	S24-Ap0006766	X	X	X
6	HVS3258	Feb 01, 2024		Filter paper	S24-Ap0006767	X	X	X
7	HVS3308	Feb 07, 2024		Filter paper	S24-Ap0006768	X	X	X
8	HVS3289	Feb 13, 2024		Filter paper	S24-Ap0006769	X	X	X
9	HVS3273	Feb 19, 2024		Filter paper	S24-Ap0006770	X	X	X
10	HVS3279	Feb 25, 2024		Filter paper	S24-Ap0006771	X	X	X
11	HVS3268	Mar 02, 2024		Filter paper	S24-Ap0006772	X	X	X
12	HVS3359	Mar 08, 2024		Filter paper	S24-Ap0006773	X	X	X
13	HVS3355	Mar 14, 2024		Filter paper	S24-Ap0006774	X	X	X



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

ABN: 50 005 085 521

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

ABN: 91 05 0159 898

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

NZBN: 9429046024954

Auckland	Auckland (Asb)	Christchurch	Tauranga
35 O'Rorke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402

Company Name:	Ramboll Australia Pty Ltd	Order No.:	318001376-007	Received:	Apr 3, 2024 4:48 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	1084029	Due:	Apr 10, 2024
		Phone:	02 9954 8118	Priority:	5 Day
		Fax:	02 9954 8150	Contact Name:	Stephen Maxwell
Project Name:	TARAGO AQM				
Project ID:	318001376-007				
Eurofins Analytical Services Manager : Andrew Black					

Sample Detail						Lead	Particulates - Final weighing	Particulates - Initial weighing
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X
14	HVS3321	Mar 20, 2024		Filter paper	S24-Ap0006775	X	X	X
15	HVS3344	Mar 26, 2024		Filter paper	S24-Ap0006776	X	X	X
Test Counts						15	15	15

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the '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 before sample receipt deadlines as stated on the SRA.

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

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

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

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ppm: parts per million
µg/L: micrograms per litre	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	Colour: Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
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 moisture has been determined on a solid sample, the result is expressed on a dry weight 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 represents 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 similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (<i>bis</i> -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 6.0
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 only be used as a guide 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%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as 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 are 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.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Lead	Total ug	< 1			1	Pass	

Comments
Sample Integrity

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

Authorised by:

Andrew Black
Emily Rosenberg

Analytical Services Manager
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 shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

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: **Stephen Maxwell**

Report **1084020-A**
Project name **TARAGO AQM**
Project ID **318001376-007**
Received Date **Apr 03, 2024**

Client Sample ID			DDG 1 - STEWART STREET	DDG2 - SMC	DDG3 - BOYD STREET	DDG4 - MULWAREE STREET
Sample Matrix			Dust Deposition	Dust Deposition	Dust Deposition	Dust Deposition
Eurofins Sample No.			S24- Ap0006724	S24- Ap0006725	S24- Ap0006726	S24- Ap0006727
Date Sampled			Jan 28, 2024	Jan 28, 2024	Jan 28, 2024	Jan 28, 2024
Test/Reference	LOR	Unit				
Dust Deposition						
Combustible Solids	0.1	g/m2.mth	< 0.1	0.2	1.3	3.7
Soluble Solids	0.1	g/m2.mth	< 0.1	0.5	1.4	4.7
Total Solids Dried at 103 °C to 105 °C	0.1	g/m2.mth	0.1	0.9	3.3	8.8
Volume (total)*	0.1	mL	460	670	520	1400
Ash*	0.1	g/m2.mth	0.1	0.2	0.6	0.4
Insoluble Solids	0.1	g/m2.mth	0.1	0.4	1.9	4.1
Heavy Metals						
Lead	1	Total ug	< 1	< 1	< 1	< 1

Client Sample ID			DDG 1 - STEWART STREET	DDG2 - SMC	DDG3 - BOYD STREET	DDG4 - MULWAREE STREET
Sample Matrix			Dust Deposition	Dust Deposition	Dust Deposition	Dust Deposition
Eurofins Sample No.			S24- Ap0006728	S24- Ap0006729	S24- Ap0006730	S24- Ap0006731
Date Sampled			Feb 27, 2024	Feb 27, 2024	Feb 27, 2024	Feb 27, 2024
Test/Reference	LOR	Unit				
Dust Deposition						
Combustible Solids	0.1	g/m2.mth	0.8	0.7	0.7	0.8
Soluble Solids	0.1	g/m2.mth	4.4	4.5	3.2	4.7
Total Solids Dried at 103 °C to 105 °C	0.1	g/m2.mth	5.4	5.3	4.1	5.7
Volume (total)*	0.1	mL	1300	1300	1400	1400
Ash*	0.1	g/m2.mth	0.2	0.1	0.1	0.2
Insoluble Solids	0.1	g/m2.mth	1.0	0.8	0.9	1.0
Heavy Metals						
Lead	1	Total ug	< 1	< 1	< 1	< 1

Client Sample ID			DDG 1 - STEWART STREET	DDG2 - SMC	DDG3 - BOYD STREET	DDG4 - MULWAREE STREET
Sample Matrix			Dust Deposition	Dust Deposition	Dust Deposition	Dust Deposition
Eurofins Sample No.			S24- Ap0006732	S24- Ap0006733	S24- Ap0006734	S24- Ap0006735
Date Sampled			Mar 27, 2024	Mar 27, 2024	Mar 27, 2024	Mar 27, 2024
Test/Reference	LOR	Unit				
Dust Deposition						
Combustible Solids	0.1	g/m2.mth	0.7	0.4	0.2	0.2
Soluble Solids	0.1	g/m2.mth	5.5	5.4	4.5	3.9
Total Solids Dried at 103 °C to 105 °C	0.1	g/m2.mth	6.4	6.0	4.9	4.2
Volume (total)*	0.1	mL	600	780	650	620
Ash*	0.1	g/m2.mth	0.3	0.1	0.1	0.1
Insoluble Solids	0.1	g/m2.mth	0.9	0.6	0.4	0.3
Heavy Metals						
Lead	1	Total ug	< 1	< 1	< 1	< 1

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**Dust Deposition**

- Method: LTM-INO-4160 Determination of Dust Deposition of Ambient Air

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Testing Site

Sydney

Sydney

Extracted

Apr 04, 2024

Apr 04, 2024

Holding Time

5 Days

28 Days



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

ABN: 50 005 085 521

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

ABN: 91 05 0159 898

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

NZBN: 9429046024954

Auckland 35 O'Rorke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Auckland (Asb) Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	Tauranga 1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402
---	--	--	--

Company Name:	Ramboll Australia Pty Ltd	Order No.:	318001376-007	Received:	Apr 3, 2024 4:48 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	1084020	Due:	Apr 10, 2024
		Phone:	02 9954 8118	Priority:	5 Day
		Fax:	02 9954 8150	Contact Name:	Stephen Maxwell
Project Name:	TARAGO AQM				
Project ID:	318001376-007				
Eurofins Analytical Services Manager : Andrew Black					

Sample Detail						Lead	Dust Deposition
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	DDG 1 - STEWART STREET	Jan 28, 2024		Dust Deposition	S24-Ap0006724	X	X
2	DDG2 - SMC	Jan 28, 2024		Dust Deposition	S24-Ap0006725	X	X
3	DDG3 - BOYD STREET	Jan 28, 2024		Dust Deposition	S24-Ap0006726	X	X
4	DDG4 - MULWAREE STREET	Jan 28, 2024		Dust Deposition	S24-Ap0006727	X	X
5	DDG 1 - STEWART STREET	Feb 27, 2024		Dust Deposition	S24-Ap0006728	X	X
6	DDG2 - SMC	Feb 27, 2024		Dust Deposition	S24-Ap0006729	X	X
7	DDG3 - BOYD	Feb 27, 2024		Dust	S24-Ap0006730	X	X



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

ABN: 50 005 085 521

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

ABN: 91 05 0159 898

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

NZBN: 9429046024954

Auckland 35 O'Rorke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Auckland (Asb) Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	Tauranga 1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402
---	--	--	--

Company Name:

Address:

Project Name:

Project ID:

Ramboll Australia Pty Ltd

Level 3/100 Pacific Highway

North Sydney

NSW 2060

TARAGO AQM

318001376-007

Order No.:

Report #:

Phone:

Fax:

318001376-007

1084020

02 9954 8118

02 9954 8150

Received:

Due:

Priority:

Contact Name:

Apr 3, 2024 4:48 PM

Apr 10, 2024

5 Day

Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail					Lead	Dust Deposition
Sydney Laboratory - NATA # 1261 Site # 18217					X	X
	STREET			Deposition		
8	DDG4 - MULWAREE STREET	Feb 27, 2024		Dust Deposition	S24-Ap0006731	X X
9	DDG 1 - STEWART STREET	Mar 27, 2024		Dust Deposition	S24-Ap0006732	X X
10	DDG2 - SMC	Mar 27, 2024		Dust Deposition	S24-Ap0006733	X X
11	DDG3 - BOYD STREET	Mar 27, 2024		Dust Deposition	S24-Ap0006734	X X
12	DDG4 - MULWAREE STREET	Mar 27, 2024		Dust Deposition	S24-Ap0006735	X X
Test Counts					12	12

Date Reported:Apr 16, 2024

Eurofins Environment Testing 179 Magowar Road, Girraween NSW, Australia, 2145
ABN : 50 005 085 521 Telephone: +61 2 9900 8400

Page 5 of 8

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the '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 before sample receipt deadlines as stated on the SRA.

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

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

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

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ppm: parts per million
µg/L: micrograms per litre	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	Colour: Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
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 moisture has been determined on a solid sample, the result is expressed on a dry weight 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 represents 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 similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (<i>bis</i> -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 6.0
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 only be used as a guide 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%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as 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 are 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.

Quality Control Results

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Lead	S24-Ap0006735	CP	%	86			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			
Lead	S24-Ap0006724	CP	Total ug	< 1	< 1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Lead	S24-Ap0006725	CP	Total ug	< 1	< 1	<1	30%	Pass	

Comments
Sample Integrity

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

Authorised by:

Nileshni Goundar	Analytical Services Manager
Charl Du Preez	Senior Analyst-Inorganic
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 shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.