



EMISSION
ASSESSMENTS

REPORT NUMBER: 1920-166

Accendo Australia

Preston Quarry Baseline Dust Survey

3 November 2020

ATTENTION: Kirsten Muir-Thompson





DOCUMENT REVIEW					
Version	Date	Status	Prepared By	Reviewed By	Authorised By
1.0	23 October 2020	Final	Daniel Jackson (EAPL)	Stuart Inglis (EAPL)	Stuart Inglis (EAPL)
1.1	3 November 2020	Final	Daniel Jackson (EAPL)	Stuart Inglis (EAPL)	Stuart Inglis (EAPL)





Date: 03/11/2020

Client Details:

Kirsten Muir-Thompson
Accendo Australia
West Busselton
WA 6280.

Prepared on behalf of Accendo Australia by:

Emission Assessments Pty Ltd
Unit 6, 35 Sustainable Avenue
Bibra Lake WA 6163

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B.Sc (Environmental Science)

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Air Principal (Acting)
B.Sc (Environmental Management)

Authorised By: Stuart Inglis
Operations Manager
B.Sc (Applied Environmental Sciences)



STATEMENT OF LIMITATION

This assessment was restricted to the agreed-upon scope of work. No representations or warranties are made concerning the nature or quality of air, water or soil or any other substance on the inspected property, other than visual observations or measurements as stated within this report.

In preparing this report, Emission Assessments has relied upon certain verbal information and documentation provided by the client and/or third parties. Except as discussed, Emission Assessments did not attempt to independently verify the accuracy or completeness of that information; but did not detect any inconsistency or omission of a nature that might call into question the validity of any of it. To the extent that the conclusions in this report are based in whole or in part on such information, they are contingent on its validity. Emission Assessments assume no responsibility for any consequences arising from any information or condition that was concealed, withheld, misrepresented or otherwise not fully disclosed or available to Emission Assessments.

Within the limitations of the agreed-upon scope of work, this assessment has been undertaken and performed in a professional manner, in accordance with generally accepted practices, using a degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. No other warranty, expressed, or implied is made.

This report is based upon a scope and is subject to the limitations defined herein. It has been prepared on behalf of the Accendo Australia. No person or organisation other than Accendo Australia is entitled to rely upon it without prior written consent from Emission Assessments; and such third party in using or relying on this report shall have no legal recourse against Emission Assessments and shall indemnify and defend them from and against all claims arising out of, or in conjunction with, such use or reliance.



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1 INTRODUCTION

Emission Assessments Pty Ltd (EAPL) was engaged by Accendo Australia to undertake an independent environmental assessment at the area surrounding Lot 1002 Preston Beach Rd North, Preston Beach, WA.

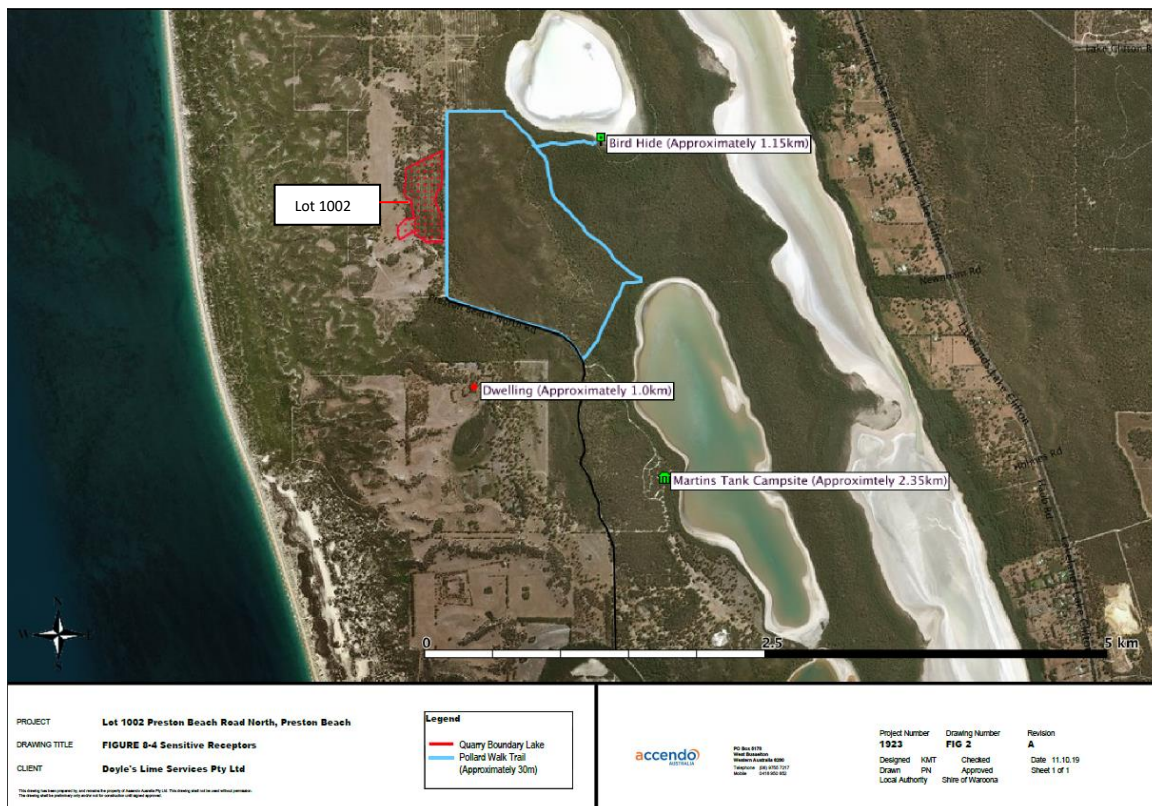
This assessment forms part of the required approval process for the proposed lime quarry at this location. An investigation into baseline ambient dust levels at Lot 1002 and sensitive receptors surrounding the proposed quarry was conducted from 04/06/2020 to 11/09/2020 by Daniel Jackson.

These sensitive receptors are positions that have been pre-determined by the client as being of environmental and social importance. They are as follows:

1. Martins Tank Camp Site
2. Pollard Lake Bird Hide
3. Residential Dwelling South
4. Site boundary LOT 1002

Refer to **Figure 1**.

Figure 1: Sensitive Receptors Surrounding Lot 1002 Preston Beach Rd North



The monitoring program was initiated to quantify the level of ambient dust at these premises over a period of three months (90 days) between the following dates:



- Thursday 4th June 2020 – Friday 3rd July 2020
- Monday 13th July 2020 – Thursday 13th August 2020
- Thursday 13th August 2020 – Monday 11th September 2020



2 MONITORING LOCATIONS

A map of the monitoring locations is shown in **Figure 2**.

Figure 2: Map of Monitoring Locations



2.1 LOCATION 1: MARTINS TANK CAMPSITE

Martins Tank Campsite is situated approximately 2.35km south-east to Lot 1002 (see **Figure 2** and **Figure 3**).

The GPS co-ordinates for the monitoring location is -32.845394, 115.668929.

The deposition gauge was positioned within the campgrounds, nearest to campsite 1 on the northern side of the grounds. The site is an unsecured premise which makes the monitor prone to theft and vandalism.

2.2 LOCATION 2: LAKE POLLARD BIRD HIDE

The Lake Pollard Bird Hide is situated approximately 1.15km east to Lot 1002 (see **Figure 2** and **Figure 4**).

The GPS co-ordinates for the monitoring location is -32.824108, 115.663863.

The deposition gauge was positioned approximately 10 meters east of the bird hide. The site is an unsecured premise which makes the monitor prone to theft and vandalism.

Figure 3: Location 1 Deposition Gauge



Figure 4: Location 2 Deposition Gauge



2.3 LOCATION 3: DWELLING

There is a dwelling that was identified approximately 1km south to Lot 1002 (see **Figure 2** and **Figure 5**).

The GPS co-ordinates for the monitoring location is -32.835684, 115.656230.

Emission Assessments were unable to make contact with the dwelling occupant to gain access to the site. The deposition gauge was therefore positioned at an accessible area that was as near as possible to this dwelling and in an area that falls between the dwelling and Lot 1002. This position was along the south side of Preston Beach Road North, approximately 500m north of the dwelling and 800m south-east of Lot 1002.

The site is an unsecured premise which makes the monitor prone to theft and vandalism.

2.4 LOCATION 4: LOT 1002

Lot 1002 is located immediately to the west of Yalgorup National Park and approximately 1.5km from Preston Beach coastline (see **Figure 2** and **Figure 6**).

The GPS co-ordinates for the monitoring location is -32.830691, 115.651825.

The deposition gauge was positioned along the south-eastern boundary of Lot 1002. The site is an unsecured premise which makes the monitor prone to theft and vandalism.

Figure 5: Location 3 Deposition Gauge



Figure 6: Location 4 Deposition Gauge



3 SAMPLING METHODOLOGY

3.1 DUST DEPOSITION GAUGE

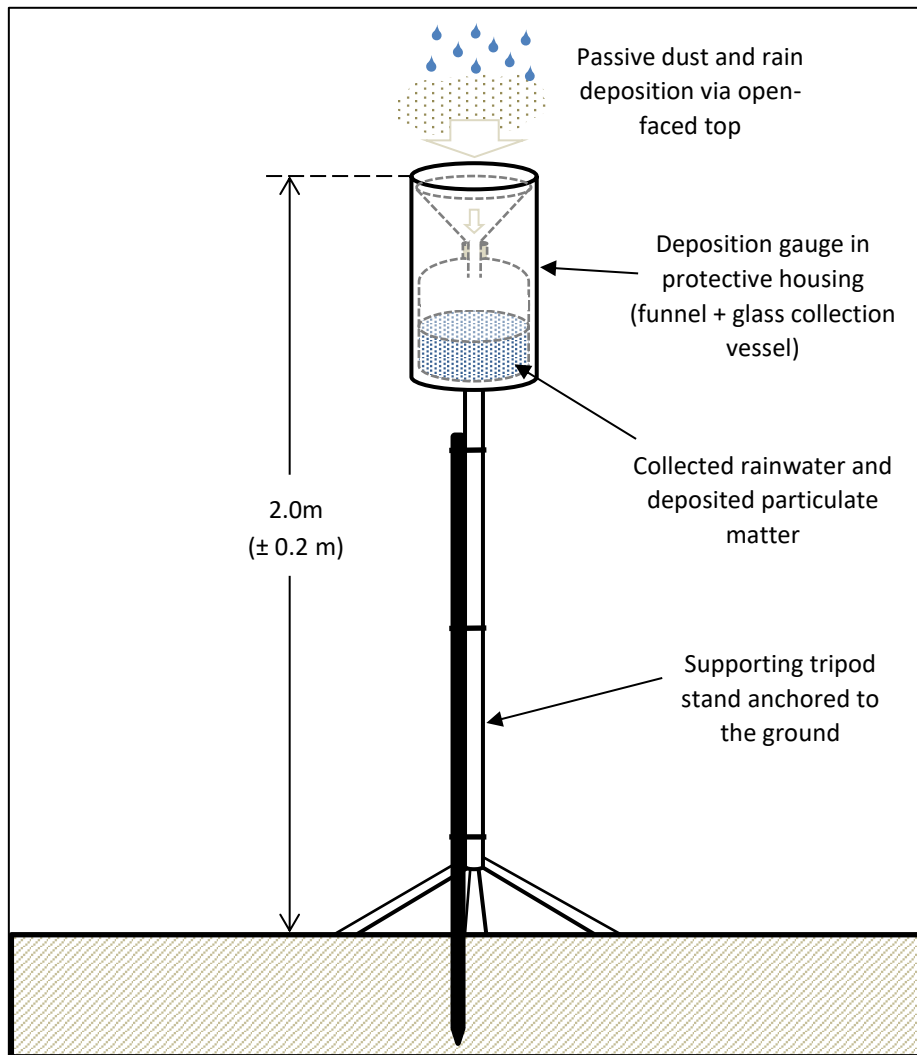
Monitoring was undertaken in accordance with 'AS/NZ 3580.10.1:2003 - Determination of Particulate Matter - Deposited matter - Gravimetric method.' A Standard Dust Deposition Gauge was used for the dust deposition rate measurements over defined exposure periods of 30 ± 4 days.

The equipment was set-up as shown in **Figure 7**, with an open-faced gauge positioned in an upwards orientation and mounted on a tripod stand so that the top of the deposition gauge is situated at a height of $2.0\text{m} \pm 0.2\text{m}$. The gauge comprises a wide-mouth collection funnel mounted on a collection vessel. Prior to commencement of sampling a measured 10.0mL aliquot of copper sulphate solution was added to the collection vessel to prevent algal growth which may affect the measured results.

Airborne particles entrained in the local ambient air are deposited in the gauge via natural processes (wind, rainfall etc.) and are passively collected in a bottle along with any accumulated rainwater.



Figure 7: Schematic of a Standard Dust Deposition Gauge



Three sets of consecutive deposition gauge sampling were undertaken at each site over the following dates:

1st period: 4 June to 2 July 2020

2nd period: 13 July to 13 August 2020

3rd period: 13 August to 11 October 2020.

Upon completion of each monitoring period the inside surfaces of the funnel were rinsed with de-ionised water to remove any dust collected. This was combined with the contents of the collection vessel, which was then stoppered and labelled with a unique identification number. The bottles were then submitted to MPL Laboratories, a NATA accredited laboratory, for analysis of total solids. The total solids results are expressed as a deposition rate of grams per square meter per month ($\text{g}/\text{m}^2/\text{month}$) and total grams per sample (g).



4 VARIATIONS TO PROTOCOLS

It should be noted that the dust deposition gauges erected on 04/06/2020 at Location 1 (Martins Tank Campsite) and Location 2 (Bird Hide) were found to be tampered with upon collection. It was therefore not possible to collect a dust deposition result from these locations during the first sampling month.

Please note that the positions stated in the laboratory analysis report by MPL (Appendix A) do not align with the position numbers listed in this report. They have been re-numbered as follows:

- EAPL Position 1 = MPL Position 1
- EAPL Position 2 = MPL Position 3
- EAPL Position 3 = MPL Position 4
- EAPL Position 4 = MPL Position 2

Where 'EAPL' refers to this report and 'MPL' refers to the analytical report in Appendix A.

5 WEATHER CONDITIONS

The following weather conditions (**Table 1**) were observed during the sampling period at weather station number 009977 in Mandurah. This weather station has been identified as the closest active station to the sampling location (approximately 40.0km away).

Table 1: Weather Observations from BOM Weather Station 009977 (Mandurah)

Analyte	Unit	Results			
		June	July	August	September
Monthly rainfall	mm	108.0	85.6	59.2	60.8
9am windspeed	km/h	16	14	13	16
3pm windspeed	km/h	15	14	15	17

The prevailing wind direction during the sampling period is westerly. It should be noted that the proposed operations intend to operate between the drier months of December to April, during which the prevailing wind direction changes to southerly and rainfall is significantly less.

The change to prevailing winds to southerly indicates that the potential dust



6 RESULTS

The results for dust deposition have been summarised in **Table 2**.

Table 2: Summary of Results for Dust Deposition

Position	Analyte	Unit	Results		
			04/06/2020 to 02/07/2020	13/07/2020 to 13/08/2020	13/08/2020 to 11/09/2020
1	Total Solids	g/m ² /month	-	5.8	7.4
	Dust Weight	g	-	0.108	0.130
2	Total Solids	g/m ² /month	-	3.0	7.4
	Dust Weight	g	-	0.056	0.131
3	Total Solids	g/m ² /month	13	2.8	57
	Dust Weight	g	0.215	0.052	1.00
4	Total Solids	g/m ² /month	12	15	4.3
	Dust Weight	g	0.221	0.279	0.076

Note: There are currently no standards or guidelines for maximum allowable total deposited solids listed for the Preston Beach local area (Shire of Waroona).

7 CONCLUSION

Monitoring conducted during this period in 2020 is used to set a baseline of representative normal conditions and levels of dust prior to any potential additional dust generated from proposed quarry activities.

Further monitoring will be conducted over another 3-month period when the quarry is in normal operation to evaluate the potential changes to ambient dust levels at noted sensitive receivers.

The change to prevailing winds to southerly indicates that the potential dust increase would mainly impact locations 3 (residential dwelling) and 4 (Martins Tank campsite).

Upon review of post monitoring data, the potential impact can be evaluated with the possibility of further monitoring such as particle sizing (PM10/PM2.5) implemented should results indicate significant impact and potential breaches to NEPM or other ambient air quality guidelines.



APPENDIX A

Analytical Report and Chain of Custody – Total Solids (MPL)



CERTIFICATE OF ANALYSIS 246553

Client Details

Client	Emission Assessments Pty Ltd
Attention	Daniel Jackson
Address	Unit 6, 35 Sustainable Ave, Bibra Lake, WA, 6163

Sample Details

Your Reference	1920-166
Number of Samples	2 Dust Gauge
Date samples received	02/07/2020
Date completed instructions received	02/07/2020

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by 17/07/2020

Date of Issue 17/07/2020

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By

Heram Halim, Operations Manager

Authorised By

Michael Kubiak, Laboratory Manager

Client Reference: 1920-166

Dust Deposition AS 3580.10.1				
Our Reference			246553-1	246553-2
Sample ID	UNITS	PQL	1920166-002	1920166-004
Your Reference			Position 2 - June	Position 4 - June
Finish Date			02/07/2020	02/07/2020
S _t - Total Solids	g/m ² /month	0.1	12	13
Dust Weight*	g		0.221	0.215

Method ID	Methodology Summary
INORG-050	Dust Deposition in accordance with AS3580.10.1.

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.



TO BE COMPLETED BY SUB-CONTRACTED LABORATORY:

Date Received: 2/7/2020
 Time Received: 16:30
 Expected Date of Completion: _____
 Sample Condition on Arrival:

Name and Signature:

am *gum*

EAPL Job Number: 1920-166
 EAPL Contact Person: Daniel Jackson
 Phone: 9494 2958
 Requested Completion Date: **Standard TAT**

CHAIN OF CUSTODY – SAMPLE DETAILS

PLEASE RETURN THIS COMPLETED PAGE TO EMISSION ASSESSMENTS ON FAX NO. (08) 9494 2959

EAPL Sample Number	Sample Details	Date Collected	Media/Matrix	Analysis/Suite
<u>1</u> 1920166-002	Position 2 - June	02/07/2020	CdSO4	Dust Gauge AS3580.10.2
<u>2</u> 1920166-004	Position 4 - June	02/07/2020	CdSO4	Dust Gauge AS3580.10.4

- **PLEASE RETURN GLASS FLASKS**

Empl Laboratories **enviroLAB**
 Job No. - 246553 246553
 Date Rec - 2/7/2020
 Time Rec - 16:30
 Rec By - am
 TAT Req - SAME 1/2/3/STD
 Temp - cool / ambient
 Cooling - Ice / Ice pack None
 Security Seal - Yes / No



EMISSION ASSESSMENTS

MPL

16 - 18 Hayden Ct

Myaree WA 6154

ATTENTION: SAMPLE RECEIVABLE Todd Lee

Please find enclosed a total of 12 samples. A detailed outline of the samples sent and the analyses required is given in the attached Chain of Custody.

EAPL Job Number:	1920-166
Laboratory Quote Number:	20P242
EAPL PO Number:	P01920 P02021416
Date of Sample Submission:	02/07/2020

QUALITY CONTROL REQUESTS:

Please report all internal quality control results including recoveries of certified reference materials, duplicate and laboratory blank analysis, surrogates/spikes etc for all samples provided.

REPORTING OF RESULTS:

- Please issue a soft copy via email to: data@eapl.net.au
- To reduce paper use **please do not issue a hardcopy.**

Please do not hesitate to contact the undersigned should there be any query with this request.

Yours sincerely,

For Emission Assessments Pty Ltd.

Daniel Jackson



CERTIFICATE OF ANALYSIS 248590

Client Details

Client	Emission Assessments Pty Ltd
Attention	Daniel Jackson
Address	Unit 6, 35 Sustainable Ave, Bibra Lake, WA, 6163

Sample Details

Your Reference	<u>1920-166</u>
Number of Samples	4 Dust Dep
Date samples received	13/08/2020
Date completed instructions received	13/08/2020

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by 27/08/2020

Date of Issue 26/08/2020

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By

Heram Halim, Operations Manager

Authorised By

Michael Kubiak, Laboratory Manager

Client Reference: 1920-166

Dust Deposition AS 3580.10.1					
Our Reference		248590-1	248590-2	248590-3	248590-4
Your Reference	UNITS	1920166-005	1920166-006	1920166-007	1920166-008
Location		Position 1 - July	Position 2 - July	Position 3 - July	position 4 - July
Finish Date		13/08/2020	13/08/2020	13/08/2020	13/08/2020
S _t - Total Solids	g/m ² /month	5.8	15	3.0	2.8
Dust Weight*	g	0.108	0.279	0.056	0.052

Method ID	Methodology Summary
INORG-050	Dust Deposition in accordance with AS3580.10.1.

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.



TO BE COMPLETED BY SUB-CONTRACTED LABORATORY:

Date Received: 13/8/2020
 Time Received: 13:50
 Expected Date of Completion: _____
 Sample Condition on Arrival: _____

Name and Signature:
Am *Jackson*

EAPL Job Number: 1920-166

CHAIN OF CUSTODY – SAMPLE DETAILS

EAPL Contact Person: Daniel Jackson

Phone: 9494 2958

Requested Completion Date: **Standard TAT**

PLEASE RETURN THIS COMPLETED PAGE TO EMISSION ASSESSMENTS ON FAX NO. (08) 9494 2959

EAPL Sample Number	Sample Details	Date Collected	Media/Matrix	Analysis/Suite
<u>1</u> 1920166-005	Position 1 - July	13/08/2020	CdSO4	Dust Gauge AS3580.10.5
<u>2</u> 1920166-006	Position 2 - July	13/08/2020	CdSO4	Dust Gauge AS3580.10.6
<u>3</u> 1920166-007	Position 3 - July	13/08/2020	CdSO4	Dust Gauge AS3580.10.7
<u>4</u> 1920166-008	Position 4 - July	13/08/2020	CdSO4	Dust Gauge AS3580.10.8

Empl Laboratories 

Job No. - 248590
 Date Rec - 13/8/2020
 Time Rec - 13:50
 Rec By - Am
 TAT Req - SAME 1/2/3/STD
 Temp - cool / ambient amb
 Cooling - Ica / Ice pack / None None
 Security Seal - Yes / No No



EMISSION ASSESSMENTS

MPL
16 - 18 Hayden Ct
Myaree WA 6154

ATTENTION: SAMPLE RECEIVABLE
Todd Lee

Please find enclosed a total of ~~4~~ **4** samples. A detailed outline of the samples sent and the analyses required is given in the attached Chain of Custody.

EAPL Job Number:	1920-166
Laboratory Quote Number:	Email with Kiara
EAPL PO Number:	PO2021 465
Date of Sample Submission:	13/08/2020

QUALITY CONTROL REQUESTS:

Please report all internal quality control results including recoveries of certified reference materials, duplicate and laboratory blank analysis, surrogates/spikes etc for all samples provided.

REPORTING OF RESULTS:

- Please issue a soft copy via email to: data@eapl.net.au
- To reduce paper use **please do not issue a hardcopy.**

Please do not hesitate to contact the undersigned should there be any query with this request.

Yours sincerely,

For Emission Assessments Pty Ltd.

Daniel Jackson



CERTIFICATE OF ANALYSIS 250002

Client Details

Client	Emission Assessments Pty Ltd
Attention	Daniel Jackson
Address	Unit 6, 35 Sustainable Ave, Bibra Lake, WA, 6163

Sample Details

Your Reference	1920-166
Number of Samples	4 Dust Gauges
Date samples received	11/09/2020
Date completed instructions received	11/09/2020

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by 25/09/2020

Date of Issue 21/09/2020

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Results Approved By

Heram Halim, Operations Manager

Authorised By

Michael Kubiak, Laboratory Manager

Client Reference: 1920-166

Dust Deposition AS 3580.10.1						
Our Reference			250002-1	250002-2	250002-3	250002-4
Your Reference	UNITS	PQL	1920166-010	1920166-011	1920166-012	1920166-013
Location			Position 2 - August	Position 3 - August	Position 4 - August	Position 1 - August
Start Date			13/08/2020	13/08/2020	13/08/2020	13/08/2020
Finish Date			11/09/2020	11/09/2020	11/09/2020	11/09/2020
S _t - Total Solids	g/m ² /month	0.1	4.3	7.4	57	7.4
Dust Weight*	g		0.076	0.131	1.00	0.130

Method ID	Methodology Summary
INORG-050	Dust Deposition in accordance with AS3580.10.1.

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.



TO BE COMPLETED BY SUB-CONTRACTED LABORATORY:

Date Received: _____

Time Received: _____

Expected Date of Completion: _____

Sample Condition on Arrival:

Name and Signature:

EAPL Job Number: 1920-166

CHAIN OF CUSTODY – SAMPLE DETAILS



EAPL Contact Person: Daniel Jackson

Phone: 9494 2958

Requested Completion Date: **Standard TAT**

PLEASE RETURN THIS COMPLETED PAGE TO EMISSION ASSESSMENTS ON FAX NO. (08) 9494 2959

EAPL Sample Number	Sample Details	Date Collected	Media/Matrix	Sample Period	Analysis/Suite
1 1920166-010	Position 2 - August	11/09/2020	CuSO4	13/08/2020 – 11/09/2020	Total Solids - Dust Gauge AS3580
2 1920166-011	Position 3 - August	11/09/2020	CuSO4	13/08/2020 – 11/09/2020	Total Solids - Dust Gauge AS3580
3 1920166-012	Position 4 - August	11/09/2020	CuSO4	13/08/2020 – 11/09/2020	Total Solids - Dust Gauge AS3580
4 1920166-009	Position 1 - August	11/09/2020	CuSO4	13/08/2020 – 11/09/2020	Total Solids - Dust Gauge AS3580

Job No.- 250002
Date Rec - 11/9/2020
Time Rec - 13:40
Rec By - am
TAT Req - SAME 1/2/3/SD
Temp - cool / ambient
Cooling - Ice / Ice pack / None
Security Seal - Yes / No

**EMISSION
ASSESSMENTS**

MPL
16 - 18 Hayden Ct
Myaree WA 6154

**ATTENTION: SAMPLE RECEIVABLE
Todd Lee**

Please find enclosed a total of 4 samples. A detailed outline of the samples sent and the analyses required is given in the attached Chain of Custody.

EAPL Job Number:	1920-166
Laboratory Quote Number:	20P242
EAPL PO Number:	PO2021493
Date of Sample Submission:	11/09/2020

QUALITY CONTROL REQUESTS:

Please report all internal quality control results including recoveries of certified reference materials, duplicate and laboratory blank analysis, surrogates/spikes etc for all samples provided.

REPORTING OF RESULTS:

- Please issue a soft copy via email to: data@eapl.net.au
- To reduce paper use **please do not issue a hardcopy.**

Please do not hesitate to contact the undersigned should there be any query with this request.

Yours sincerely,

For Emission Assessments Pty Ltd.

Daniel Jackson