


ENVIRONMENTAL MANAGEMENT SERVICES			
Review of Monitoring Results			
GENERAL			
CLIENT:	METROMIX PTY LTD		
PROJECT NO./LOCATION:	215 - MARRANGAROO		
CONTACT PERSON:	Mr Daniel Lythgo		
SAMPLES			
Type:	Deposited Dust	No of Samples:	3
Sample Period:	03/05/2018 to 12/06/2018	Date Samples despatched:	12/06/2018
Submission Sheet received by Corkery & Co:	No		
Date Received by ALS	12/06/2018	Batch No:	24006606
Results Received by RWC:	18/06/2018		
REVIEW OF RESULTS			Comments
Results Entered/Accepted	Yes		
Comparison with Previous Results	Yes		
Statistical Analysis	Yes		
DISTRIBUTION OF RESULTS			
Result Sheets to Client:	Yes	Result Sheets to Residents:	No
Summary Sheets to Client:	Yes	Summary Sheets to Residents:	No
COMMENTS			
<p>Deposited dust monitoring results for the period from 03 May 2018 to 12 June 2018 indicate that deposited dust levels at point locations MD-2, MD-3 and MD-4 are within approved EPA annual average guideline levels.</p>			
ACTION			
No action is necessary			
SIGNED:	 Mudassar Arsalan		DATE: 18-06-18

**METROMIX MARRANGAROO QUARRY
DUST DEPOSIT GAUGE ANALYSES - PROJECT #215**

SAMPLING PERIOD	MD-2			MD-3			MD-4		
	Insoluble Matter	Ash Content	% Ash	Insoluble Matter	Ash Content	% Ash	Insoluble Matter	Ash Content	% Ash
EPA Annual Average Guideline	4.0 (Annual Av)			4.0 (Annual Av)			4.0 (Annual Av)		
18-Jan-11 to 25-Feb-11	0.1	0.1	100	0.2	0.1	50	0.1	0.1	100.0
25-Feb-11 to 31-Mar-11	2.2	1.7	77	4.0	2.9	73	1.4	0.6	42.9
01-Apr-11 to 05-May-11	0.4	0.2	50	0.4	0.2	50	0.6	0.3	50.0
06-May-11 to 06-Jun-11	0.4	0.2	50	0.6	0.4	67	0.5	0.3	60.0
06-Jun-11 to 08-Jul-11	NC	NC	NC	NC	NC	NC	NC	NC	NC
08-Jul-11 to 25-Aug-11	1.1	0.7	64	1.4	1.0	71	0.8	0.5	62.5
25-Aug-11 to 05-Sep-11	0.6	0.4	67	1.1	0.8	73	1.2	0.8	66.7
05-Oct-11 to 01-Nov-11	0.4	0.3	75	0.6	0.3	50	0.4	0.4	100.0
01-Nov-11 to 02-Dec-11	0.9	0.5	56	0.7	0.5	71	0.5	0.4	80.0
02-Dec-11 to 22-Dec-11	11.4	10.1	88.6	1.4	1.0	71.4	0.7	0.6	85.7
22-Dec-11 to 31-Jan-12	2.5	2.0	80.0	0.7	0.6	85.7	0.4	0.3	75.0
31-Jan-12 to 02-Mar-12	1.5	0.8	53.3	0.4	0.3	75.0	0.3	0.3	100.0
02-Mar-12 to 02-Apr-12	1.2	0.6	50.0	0.3	0.3	100.0	0.9	0.5	55.6
02-Apr-12 to 01-May-12	0.2	0.2	100.0	0.2	0.2	100.0	0.4	0.3	75.0
01-May-12 to 31-May-12	0.8	0.6	75.0	0.4	0.2	50.0	0.7	0.6	85.7
31-May-12 to 02-Jul-12	0.7	0.3	42.9	0.6	0.3	50.0	0.5	0.3	60.0
02-Jul-12 to 02-Aug-12	0.2	0.2	100.0	0.4	0.3	75.0	0.4	0.3	75.0
02-Aug-12 to 03-Sep-12	0.4	0.3	75.0	1.3	0.8	61.5	1.2	0.8	66.7
03-Sep-12 to 02-Oct-12	1.3	0.8	61.5	1.0	0.9	90.0	2.0	1.2	60.0
02-Oct-12 to 01-Nov-12	0.5	0.3	60.0	1.4	1.2	85.7	0.8	0.6	75.0
01-Nov-12 to 03-Dec-12	1.7	0.9	52.9	2.2	1.4	63.6	1.2	0.7	58.3
03-Dec-12 to 03-Jan-13	1.0	0.7	70.0	2.0	1.4	70.0	0.7	0.5	71.4
03-Jan-13 to 31-Jan-13	1.7	0.8	47.1	1.2	0.9	75.0	1.3	1.0	76.9
31-Jan-13 to 05-Mar-13	6.7	3.4	50.7	2.6	2.1	80.8	0.6	0.4	66.7
05-Mar-13 to 02-Apr-13	0.5	0.4	80.0	0.3	0.2	66.7	0.3	0.2	66.7
02-Apr-13 to 08-May-13	0.4	0.4	100.0	0.2	0.2	100.0	0.3	0.2	66.7
08-May-13 to 04-Jun-13	0.8	0.6	75.0	0.4	0.4	100.0	0.6	0.4	66.7
04-Jun-13 to 01-Jul-13	0.9	0.5	55.6	0.6	0.3	50.0	0.7	0.3	42.9
01-Jul-13 to 02-Aug-13	1.2	0.9	75.0	0.4	0.3	75.0	0.7	0.3	42.9
02-Aug-13 to 04-Sep-13	3.2	2.8	87.5	0.5	0.5	100.0	0.7	0.5	71.4
04-Sep-13 to 01-Oct-13	1.5	1.3	86.7	1.0	0.8	80.0	1.1	0.6	54.5
01-Oct-13 to 05-Nov-13	1.1	1.0	90.9	1.2	1.0	83.3	1.5	1.2	80.0
05-Nov-13 to 02-Dec-13	1.4	0.9	64.3	0.9	0.6	66.7	1.6	0.9	56.3
02-Dec-13 to 06-Jan-14	0.6	0.3	50.0	1.1	0.6	54.5	1.1	0.8	72.7
06-Jan-14 to 03-Feb-14	0.2	0.2	100.0	0.3	0.3	100.0	1.2	0.7	58.3
03-Feb-14 to 05-Mar-14	1.0	0.4	40.0	1.2	0.6	50.0	1.0	0.5	50.0
05-Mar-14 to 02-Apr-14	0.8	0.5	62.5	0.8	0.5	62.5	0.7	0.4	57.1
02-Apr-14 to 02-May-14	0.5	0.3	60.0	0.4	0.3	75.0	0.5	0.3	60.0
02-May-14 to 02-Jun-14	0.4	0.2	50.0	0.4	0.2	50.0	0.5	0.3	60.0
02-Jun-14 to 01-Jul-14	0.3	0.3	100.0	0.6	0.6	100.0	0.6	0.3	50.0
01-Jul-14 to 07-Aug-14	2.6	2.2	84.6	0.4	0.3	75.0	0.1	0.1	50.0
07-Aug-14 to 02-Sep-14	2.4	2.1	87.5	1.3	1.0	76.9	0.3	0.1	16.7
02-Sep-14 to 01-Oct-14	0.2	0.1	50.0	1.2	0.5	41.7	0.4	0.2	50.0
01-Oct-14 to 03-Nov-14	1.1	0.4	36.4	2.4	1.0	41.7	0.6	0.2	33.3
03-Nov-14 to 02-Dec-14	0.8	0.4	50.0	1.2	0.8	66.7	1.4	0.7	50.0
02-Dec-14 to 05-Jan-15	0.8	0.2	25.0	1.3	0.6	46.2	2.8	1.1	39.3
05-Jan-15 to 02-Feb-15	1.3	0.1	7.7	0.1	0.1	100.0	0.4	0.1	25.0
02-Feb-15 to 02-Mar-15	1.1	0.6	54.5	0.7	0.4	57.1	0.8	0.4	50.0
02-Mar-15 to 01-Apr-15	0.2	<0.1	0.0	0.2	0.1	50.0	0.3	<0.1	0.0
01-Apr-15 to 01-May-15	0.9	0.3	33.3	1.1	0.3	27.3	<0.1	<0.1	<0.1
01-May-15 to 01-Jun-15	0.5	0.4	80.0	1.0	0.3	30.0	<0.1	<0.1	<0.1
01-Jun-15 to 18-Jul-15†	0.8	0.5	62.5	0.8	0.1	12.5	0.8	0.3	37.5
18-Jul-15 to 3-Aug-15†	0.7	0.4	57.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
03-Aug-15 to 01-Sep-15	0.8	0.5	62.5	0.8	0.4	50.0	0.3	<0.1	0.0
01-Sep-15 to 07-Oct-15	0.4	0.1	25.0	0.1	<0.01	0.0	<0.1	<0.1	<0.1
07-Oct-15 to 04-Nov-15	3.8	3.0	78.9	1.5	0.8	53.3	2.0	0.7	35.0
04-Nov-15 to 04-Dec-15	0.2	<0.1	0.0	1.7	0.7	41.2	<0.1	<0.1	<0.1
04-Dec-15 to 05-Jan-16	1.1	0.5	45.5	2.1	0.8	38.1	0.1	<0.1	0.0
05-Jan-16 to 01-Feb-16	1.4	0.6	42.9	0.6	0.2	33.3	2.0	0.5	25.0
01-Feb-16 to 03-Mar-16	0.5	0.2	40.0	0.4	0.2	50.0	1.4	0.6	42.9
03-Mar-16 to 01-Apr-16	1.1	0.7	63.6	0.4	0.2	50.0	1.8	0.9	50.0
01-Apr-16 to 01-May-16	0.1	<0.1	0.0	0.2	0.1	50.0	0.9	0.5	55.6
01-May-16 to 31-May-16	0.1	<0.1	0.0	0.2	0.2	100.0	0.9	0.6	66.7
31-May-16 to 30-Jun-16	2.1	1.2	57.1	ND	ND	ND	ND	ND	ND
30-Jun-16 to 01-Aug-16	2.5	1.9	76.0	2.0	1.4	70.0	0.7	0.4	57.1
01-Aug-16 to 01-Sep-16	1.7	1.3	76.5	0.1	<0.1	0.0	0.5	0.2	40.0
01-Sep-16 to 04-Oct-16	2.0	0.3	15.0	0.2	<0.1	0.0	1.0	0.2	20.0
04-Oct-16 to 02-Nov-16	0.1	<0.1	0.0	0.9	0.6	66.7	<0.1	<0.1	<0.1
02-Nov-16 to 05-Dec-16	0.4	<0.1	0.0	2.6	1.9	73.1	<0.1	<0.1	<0.1
05-Dec-16 to 10-Jan-17	0.6	0.3	50.0	0.6	0.4	66.7	0.4	<0.1	0.0
10-Jan-17 to 03-Feb-17	0.4	0.1	25.0	0.8	0.4	50.0	0.7	0.5	71.4
03-Feb-17 to 03-Mar-17	0.1	<0.1	0.0	0.3	0.1	33.3	0.7	0.3	42.9
03-Feb-17 to 04-Apr-17	1.0	0.7	70.0	0.1	<0.1	0.0	0.1	<0.1	0.0
04-Apr-17 to 02-May-17	0.4	0.2	50.0	0.8	0.5	62.5	0.7	0.4	57.1
02-May-17 to 02-Jun-17	0.1	<0.01	0.0	0.3	0.2	66.7	0.3	0.2	66.7
02-Jun-17 to 29-Jun-17	0.2	0.1	50.0	0.6	0.4	66.7	0.2	0.1	50.0
29-Jun-17 to 02-Aug-17	0.4	0.2	50.0	0.9	0.7	77.8	0.7	0.5	71.4
02-Aug-17 to 31-Aug-17	0.8	0.3	37.5	1.1	0.9	81.8	1.0	0.5	50.0
31-Aug-17 to 04-Oct-17	0.4	0.2	50.0	0.9	0.8	88.9	1.4	1.0	71.4
04-Oct-17 to 02-Nov-17	0.4	0.1	25.0	0.9	0.7	77.8	3.1	1.2	38.7
02-Nov-17 to 04-Dec-17	0.2	<0.1	50.0	0.5	0.3	60.0	1.1	0.4	36.4
04-Dec-17 to 17-Jan-18	0.7	0.3	42.9	0.8	0.3	37.5	2.5	1.0	40.0
17-Jan-18 to 16-Feb-18	0.7	0.3	42.9	0.9	0.2	22.2	0.8	0.3	37.5
16-Feb-18 to 08-Mar-18	1.0	0.1	10.0	0.7	0.1	14.3	0.7	0.1	14.3
08-Mar-18 to 16-Apr-18	2.0	0.4	20.0	0.5	0.1	20.0	0.6	0.0	0.0
16-Apr-18 to 03-May-18	1.0	0.4	40.0	1.2	0.3	25.0	1.1	0.4	36.4
03-May-18 to 07-Jun-18	0.4	0.3	75.0	0.4	0.2	50.0	0.4	0.3	75.0
AVERAGE 1	0.7	0.2	41.1	0.8	0.4	51.8	1.1	0.5	43.4
AVERAGE 2	1.1	0.8	53.8	0.9	0.6	60.2	0.9	0.5	52.7
STANDARD DEVIATION 1	0.5	0.1	16.9	0.2	0.3	27.2	0.9	0.4	22.5
STANDARD DEVIATION 2	1.5	1.3	27.3	0.7	0.5	25.3	0.6	0.3	23.5

Units: grams per square metre per month

Note: Dust storms were evident in October 2002 due to drought conditions across NSW.

Av1/SD1 = 12 Month Rolling Average/Standard Deviation

Av2/SD2 = All samples from December 2001 excluding data from period 30 September 2002 to 1 November 2002

*Samples collected in May 2013 did not identify collection location ID. Not included in statistical analysis.

†Samples Collected in July 2015 and August 2015 were outside the 30 day sample collection period. Not included in statistical analysis.

ND: Not determined

ND¹: Broken by frost

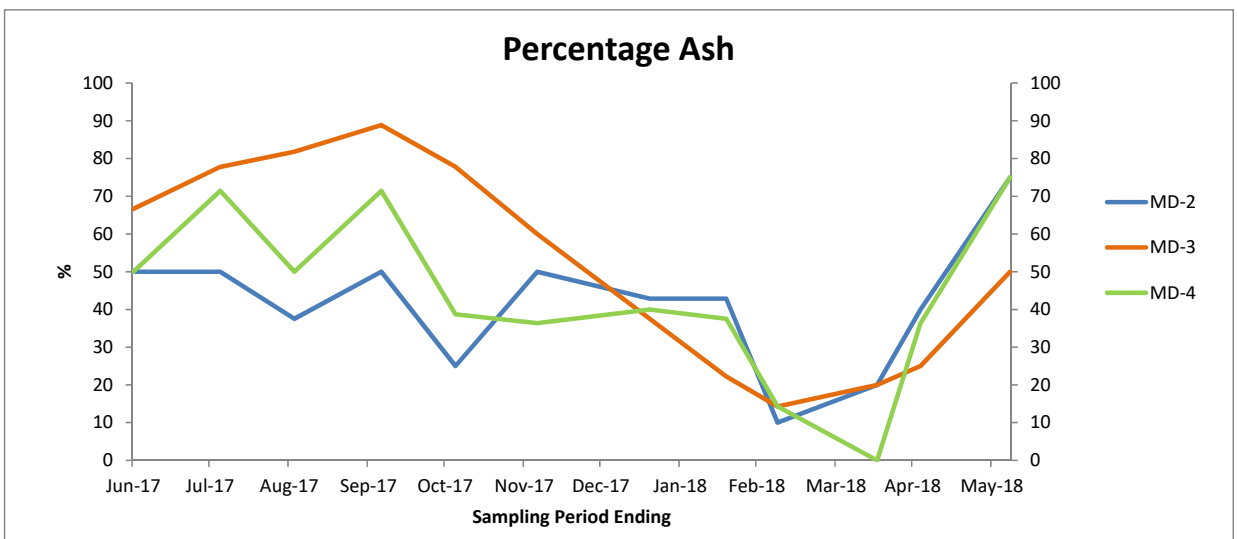
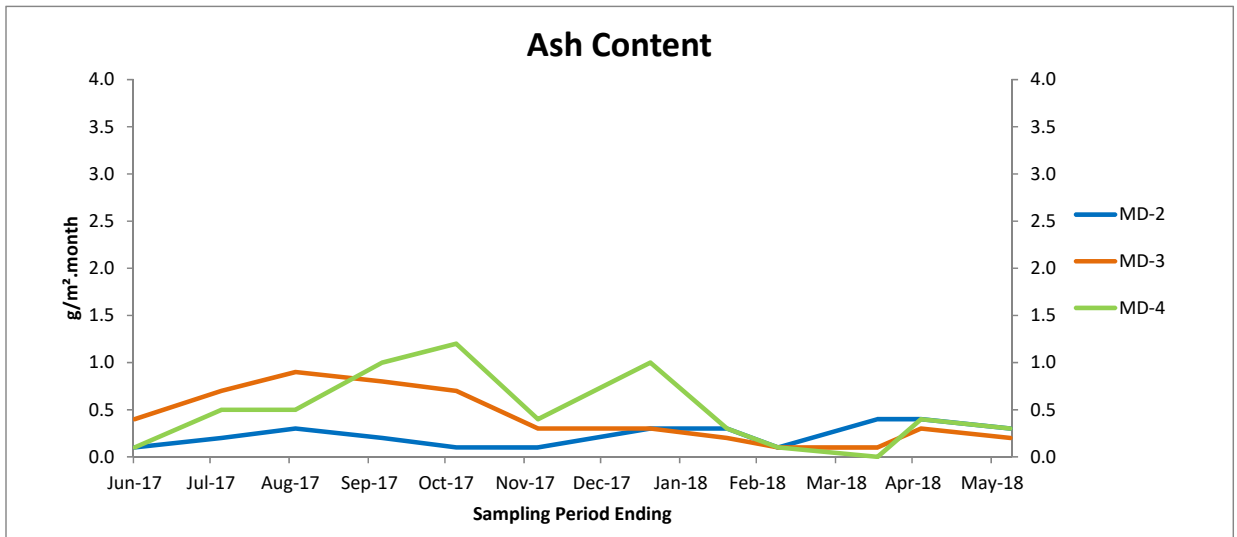
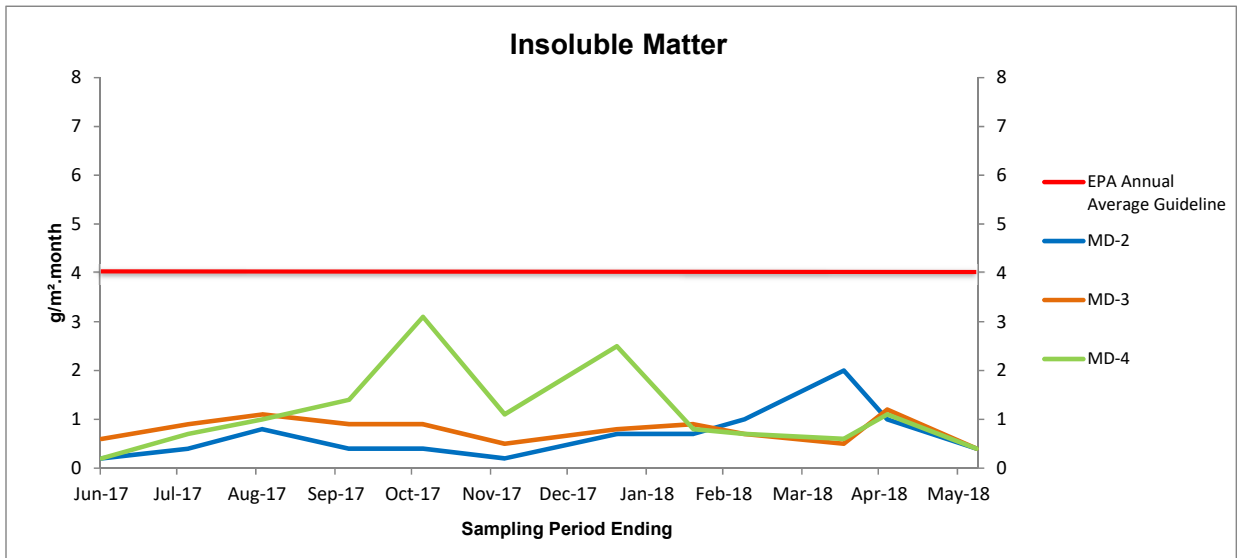
DE: Documentation Error

BD: Below Detection

NC: Not Collected



**METROMIX MARRANGAROO QUARRY
DUST DEPOSIT GAUGE ANALYSES - PROJECT #215**



CERTIFICATE OF ANALYSIS

Work Order : 24006606
Client : R W CORKERY & CO PTY LTD
Contact : MR ROB CORKERY
Address : P O BOX 239
BROOKLYN NSW, AUSTRALIA 2083
E-mail : rob@rwcorkery.com
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Project : Marrangaroo
Order number :
C-O-C number :
Sampler :
Site :
Quote number :

Page : 1 of 3
Laboratory : Coal Division Lithgow
Contact : Almudena Bryce
Address : Unit 2, 16 Donald Street
LITHGOW NSW Australia 2790
E-mail : Almudena.Bryce@alsglobal.com
Telephone : 61-2-6350-7400
Facsimile : 61-2-6352-3583
QC Level :
Date Samples Received : 12/06/2018
Issue Date : 18/06/2018
No. of samples received : 4
No. of samples analysed : 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results



NATA Accredited Laboratory 11436

Accredited for compliance with
ISO/IEC 17025

Signatories

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

Signatories
Stephanie Thompson

Position
Environmental Supervisor

Accreditation Category
Lithgow – Chemical Testing



General Comments

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **Analysis as per AS3580.10.1-2003. Samples passed through a 1mm sieve prior to analysis.**
- **NATA accreditation does not apply for results reported in g/m².mth as sampling data was provided by the client.**



Analytical Results

Sub-Matrix: DUST (Matrix: AIR)

Client sample ID

				MD2	MD3	MD4	MD5	----
				07-JUN-201810:00	07-JUN-201810:15	07-JUN-201810:20	12-JUN-2018 9:50	----
				24006606-01	24006606-02	24006606-03	24006606-04	----
Compound	CAS Number	LOR	Unit					
EA120: Ash Content								
Ash Content		0.1	g/m ² .month	0.1	0.2	0.1	0.1	----
Ash Content (mg)		1	mg	<0.01	<0.01	<0.01	<0.01	----
Combustible Matter								
Combustible Matter		0.1	g/m ² .month	0.3	0.2	0.3	0.2	----
Combustible Matter (mg)		1	mg	0.01	0.01	0.01	0.01	----
Total Insoluble Matter								
Total Insoluble Matter		0.1	g/m ² .month	0.4	0.4	0.4	0.3	----
Total Insoluble Matter (mg)		1	mg	0.01	0.01	0.01	0.01	----