



**CBased Environmental
Pty Limited**
ABN 62 611 924 264



Calga Quarry

Environmental Monitoring

**Dust Deposition Gauges, Surface and Ground
Waters and Meteorological Station**

February 2018

Colin Davies BSc MEIA CENVP
Environmental Scientist
Date: 19 March 2018

Executive Summary

CBased Environmental is contracted by Hanson Quarry Products to conduct environmental monitoring at the Calga Sand Quarry.

The monitoring includes;

- Dust Deposition Gauges;
- Surface Waters;
- Groundwaters; and
- Meteorological Station.

This report was prepared by CBased Environmental and includes the following;

- Dust Deposition results for February 2018;
- Surface Water quality results for February 2018; and
- Meteorological report for February 2018.

The February 2018 dust deposition results for insoluble solids were generally low. There were no excessively contaminated dust gauges this month. All sites, on a rolling annual average basis, are currently below the Air Quality Management Plan exceedance level of 3.7g/m².month. Results were found to be representative of dust levels as determined by the Australian Standard.

Monthly surface water samples were collected at sites C1, C2 and F. Sites B and D were dry at the time of sampling and Site A was unable to be accessed. The samples were collected and analysed for a monthly sampling event. Results show pH within the slightly acidic range, low Electrical Conductivity, low Total Dissolved Solids and low Total Suspended Solids. Oil and Grease was not detected at any sites in February 2018.

Bi-monthly groundwater monitoring is next scheduled for March 2018.

The Calga Quarry weather station data recovery in February 2018 was approximately 64%. No data was available from on the 1, 2 and 21 – 28 February 2018. Data for February 2018 shows that rainfall recorded at the Calga Quarry was lower than the Gosford BOM mean rainfall and the Peats Ridge long term rainfall for February.

The rainfall comparison is provided below:

Calga Quarry	52.2 mm [^]
BOM Peats Ridge*	NA
BOM Gosford*	163.2 mm
BOM Peats Ridge Long term mean for January*	154.3 mm

NA = Not Available

[^]Rain data not based on a full set of data.

*Data sourced from Bureau of Meteorology (BOM) website (www.bom.gov.au).

Note: Differences in the daily rainfall readings between BOM and the Calga station may occur due to BOM stations reporting rainfall at 9am and the Calga station recording rainfall at midnight.

Sampling Program

Hanson Calga Quarry conducts environmental monitoring in accordance to Development Consent, OEH (EPA) licence and Environmental Management Plans. CBased Environmental are contracted to undertake dust deposition gauge, surface and groundwater and meteorological monitoring for the project. CBased Environmental commenced monitoring from the April 2006 monitoring period.

Dust deposition gauges are operated to the Australian Standard AS3580.10.1 *“Methods for sampling and analysis of ambient air method. Determination of particulates- deposited matter- gravimetric Method”*. Sampling is undertaken every 30 +/- 2 days and each gauge is analysed for insoluble solids and ash residue. The results are reported as g/m².month.

Surface waters are sampled in accordance with Australian Standards AS5667.1 *“Guidance on the design of sample programs, sampling techniques and the preservation and handling of samples”*, AS5667.6 *“Water quality sampling—guidance on sampling of rivers and streams”* and AS5667.4 *“Water quality sampling—guidance on sampling from lakes, natural and man-made”*. Surface water monitoring sites include local streams and dams. Basic analysis including pH, Electrical Conductivity, Total Suspended Solids, Total Dissolved Solids and Total Oil and Grease is conducted monthly at Sites A and F (dams) and when Sites B, C and D are flowing. Additional samples are collected when daily rainfall exceeds 50mm.

Groundwaters are sampled in accordance with Australian Standards AS5667.1 *“Guidance on the design of sample programs, sampling techniques and the preservation and handling of samples”* and AS5667.11 *“Water quality sampling—guidance on sampling of ground waters”*. Groundwater monitoring sites are sampled bi-monthly for depth and water quality. Groundwater monitoring loggers continuously record water levels in a selection of bores.

Meteorological monitoring is conducted at the quarry and displayed on the site computer with a real-time display. Metrological parameters are measured according to Australian Standard AS3580.14 *“Methods for sampling and analysis of ambient air. Meteorological monitoring for ambient air quality monitoring applications”*

The weather stations have the following sensor configuration;

- Air temperature
- Humidity
- Rainfall
- Atmospheric pressure
- Evaporation
- Solar radiation
- Wind speed
- Wind direction

CBased Environmental continued to operate the monitoring equipment and utilise site collections at their existing locations.

The locations of monitoring points are provided in **Figure 1**.

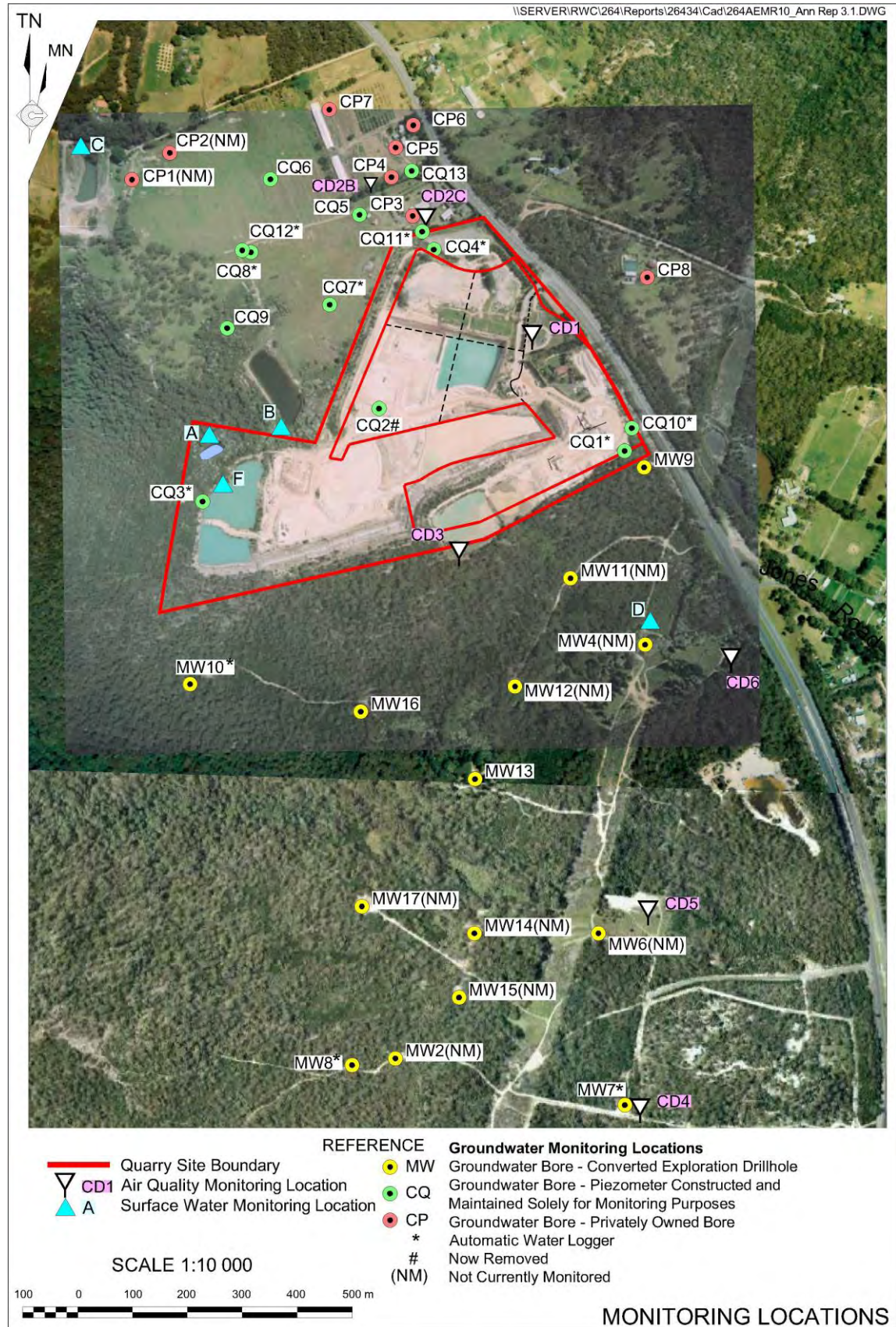


Figure 1: Hanson Calga Quarry environmental monitoring locations

2.0 Monthly Results

2.1 Dust Deposition Gauges

Table 1 displays the results for February 2018 and the project 12-month rolling average. Results are in g/m².month.

Table 1: Dust Deposition results: 1 February 2018 – 2 March 2018 (30 days)

Site	Monthly Insoluble Solids (g/m ² .month)	Monthly Ash Residue (g/m ² .month)	Monthly Combustible Matter (g/m ² .month)	Monthly Ash Residue/ Insoluble Solids %	Rolling Annual Average Insoluble Solids (g/m ² .month)
CD1	5.4	4.6	0.8	85	1.9
CD2c	1.6	1.2	0.4	75	1.0
CD3	0.8	0.5	0.3	63	1.0
CD4	0.7	0.3	0.4	43	0.6
CD5	1.2	0.6	0.6	50	0.6
CD6	1.0	0.5	0.5	50	0.8

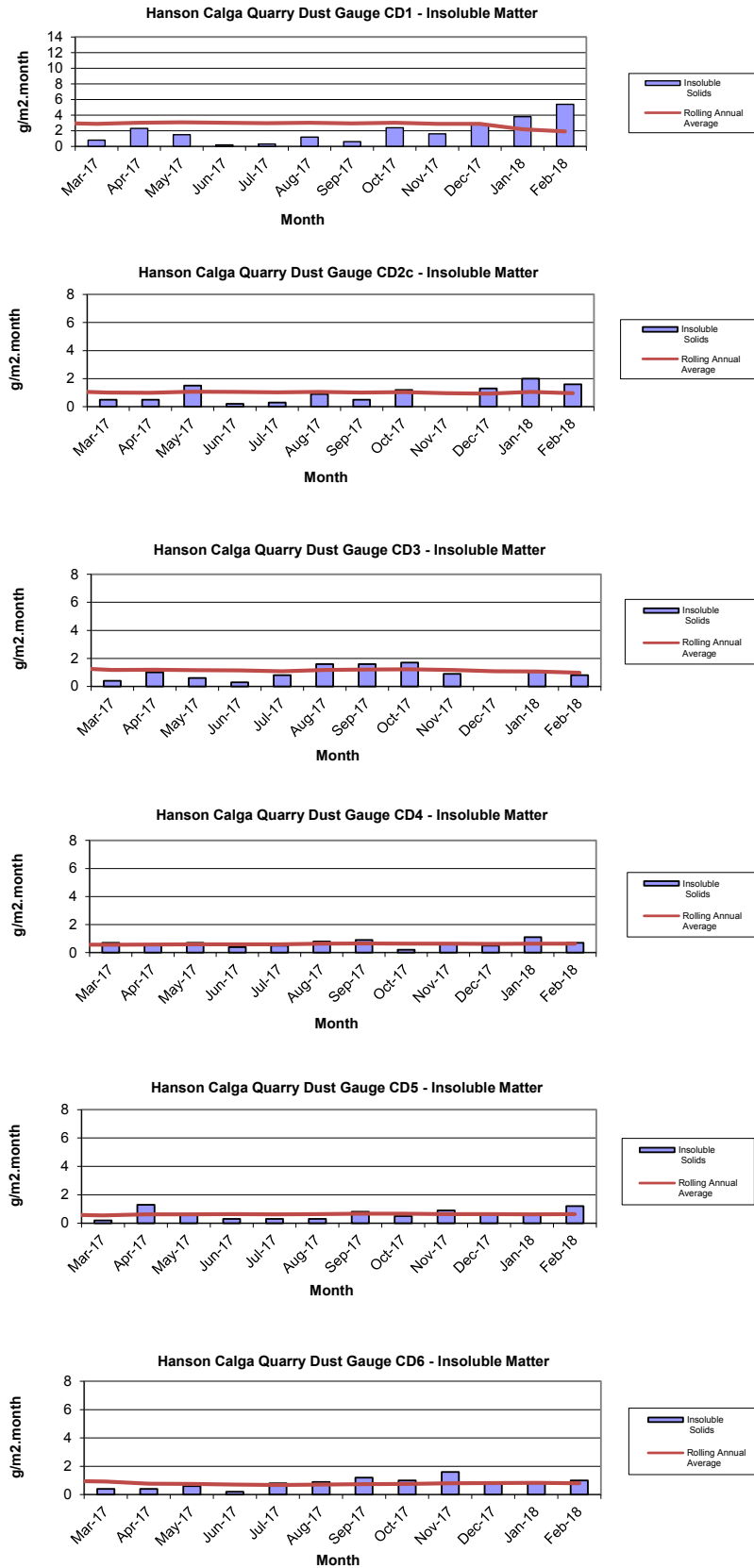
Insoluble Solids marked with an * indicate an excessively contaminated gauge. Contamination can include bird droppings, vegetation (such as plant matter, algae, pollen and seeds) and insects. Results in bold indicate insoluble solids levels above 3.7 g/m².month; the Development Consent's annual average amenity criteria at residential locations. The current rolling annual average is calculated from February 2017 to January 2018.

NA= Not Available.

CD1 was installed on the 1 May 2006. CD2a was discontinued at the start of August 2006 due to quarry operations "mining out" the site of the gauge. The replacement gauge, Site CD2b, was located in a position adjacent to the boundary between B. Kashouli and F. & J. Gazzana in conformance with the Air Quality Management Plan. CD4 was installed on 3 October 2006, to gauge air quality impacts to the south of the site operations, as were CD5 and CD6 which were installed on the 14 December 2006. CD2b was discontinued at the end of January 2010 due to contamination of the gauge by non-quarry related vehicle movements on a track adjacent to the gauge. The replacement gauge, CD2c, was located on a rehabilitated section of land between the extraction area and adjacent resident.

Dust deposition charts for all dust gauge sites appear in **Figure 2** below. The laboratory analysis is provided in **Appendix 1**.

Figure 2: Dust Deposition Charts



2.2 Surface Water Monitoring

Monthly surface water monitoring was conducted on the 2 March 2018 and results are listed in **Table 2**. The laboratory analysis sheets are provided in **Appendix 1**.

Table 2: Monthly surface water monitoring – February grab sample results

Site	Observed Flow Rate	Water Colour	Turbidity	pH	EC ($\mu\text{S}/\text{cm}$)	TDS (mg/L)	TSS (mg/L)	Oil and Grease (mg/L)
A	No access							
B	Dry							
C1	Dam	Clear	Clear	7.32	115	65	12	<5
C2	Fast	Clear	Clear	6.63	118	65	6	<5
D	Dry							
F	Dam	Clear	Clear	5.09	102	84	22	<5

Samples were collected at sites C1, C2 and F. Sites B and D were dry at the time of sampling and Site A was unable to be accessed. The samples were collected and analysed for a monthly sampling event. Results show pH within the slightly acidic range, low Electrical Conductivity, low Total Dissolved Solids and low Total Suspended Solids. Oil and Grease was not detected at any sites in February 2018.

2.2.1 Non-Routine Surface Water Sampling

No non-routine sampling was undertaken during February 2018.

2.3 Groundwater Monitoring

Bi-monthly groundwaters were sampled on 1 February 2018. Bi-monthly groundwater monitoring is next scheduled for March 2018.

2.4 Meteorological Monitoring

The Calga Quarry weather station data recovery in February 2018 was approximately 64%. No data was available from on the 1, 2 and 21 – 28 February 2018.

The weather station data follows and includes;

- Monthly data numerical summary;
- Weather charts of air temperature, humidity, heat index and wind chill, atmospheric pressure, solar radiation, evapotranspiration, rain, wind speed and data reception; and
- Wind rose (frequency distribution diagram of wind speed and direction).

Monthly weather statistics from the nearby Bureau of Meteorology (BOM) at Peats Ridge station are no longer available. However, the long-term rainfall mean is available via a link on the Gosford BOM Daily Weather Observation page.

Data for February 2018 shows that rainfall recorded at the Calga Quarry was lower than the Gosford BOM mean rainfall and the Peats Ridge long term rainfall for February.

The rainfall comparison is provided below:

Calga Quarry	52.2 mm [^]
BOM Peats Ridge*	NA
BOM Gosford*	163.2 mm
BOM Peats Ridge Long term mean for February*	154.3 mm

NA = Not Available

[^]Rain data not based on a full set of data.

*Data sourced from Bureau of Meteorology (BOM) website (www.bom.gov.au).

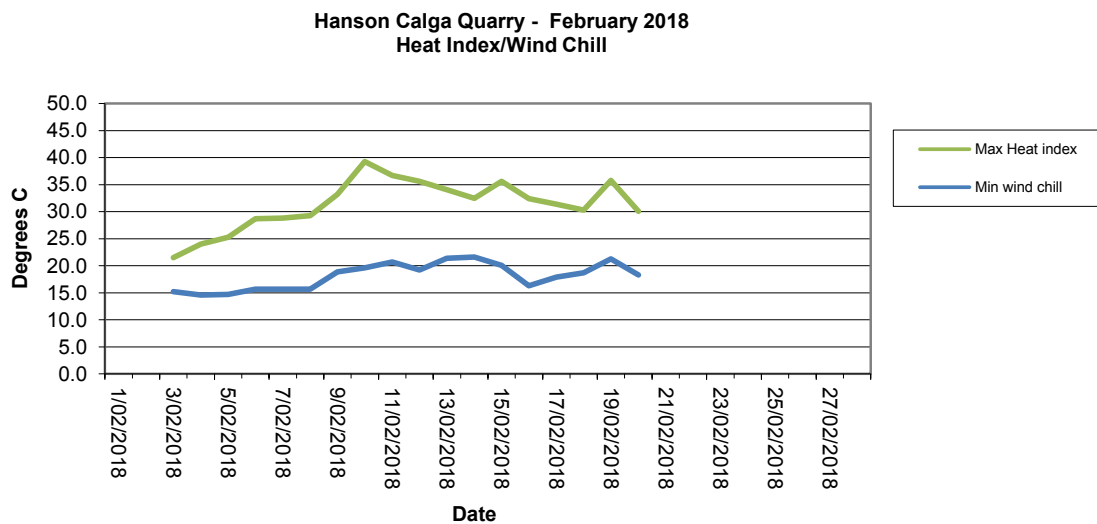
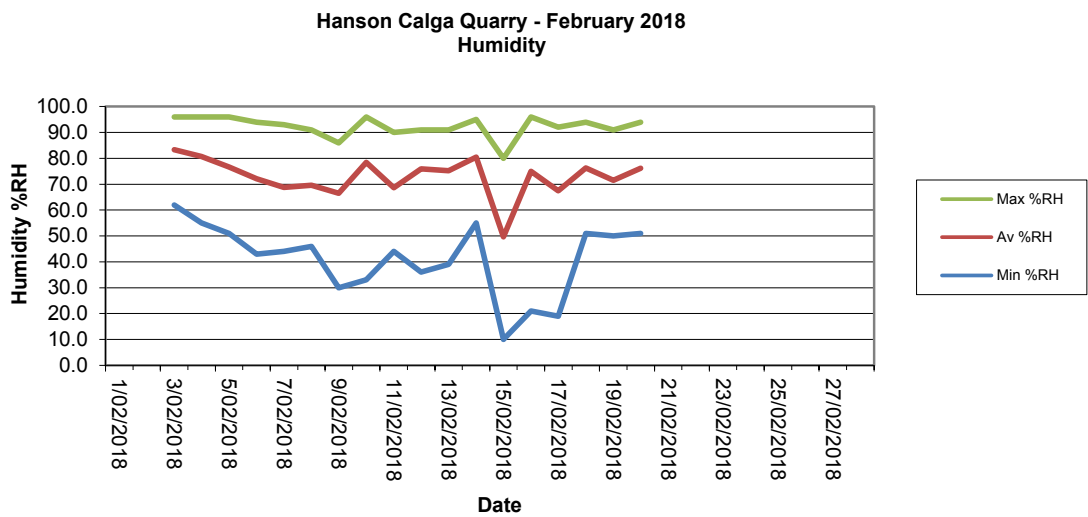
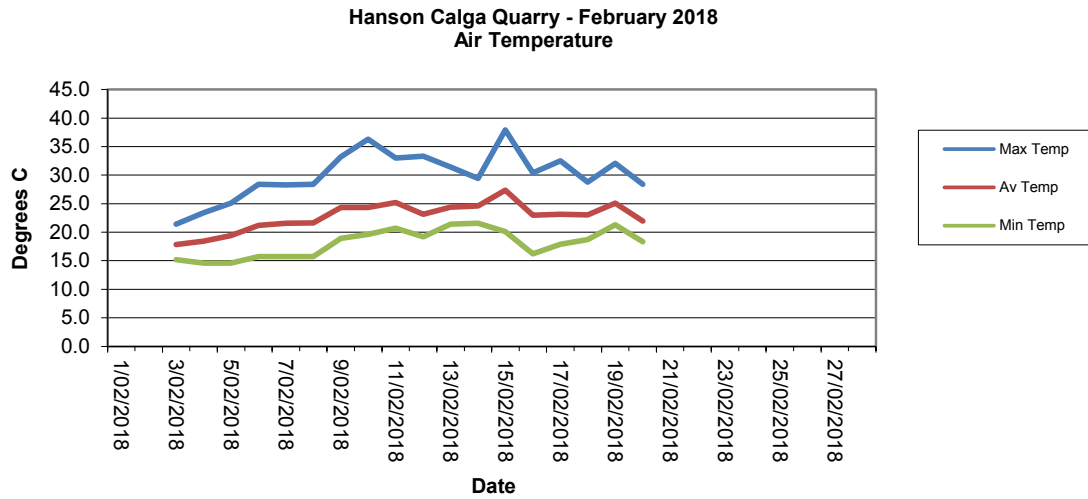
2.4.1 Monthly Meteorological Data Summary

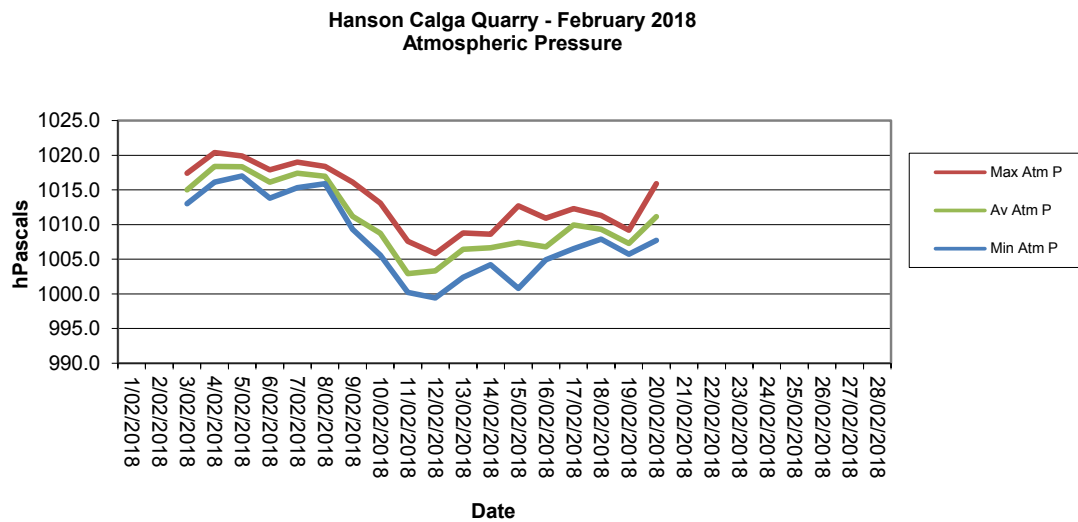
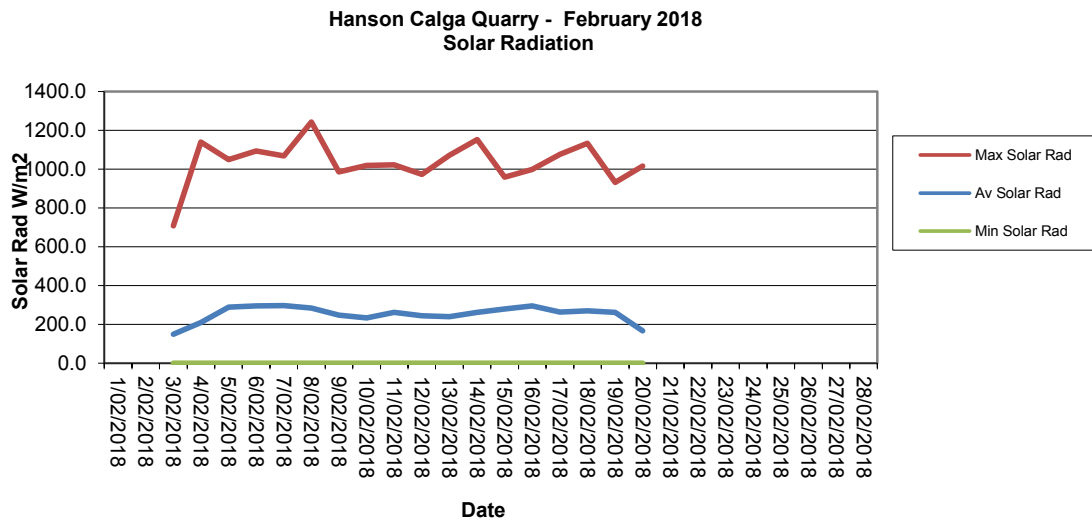
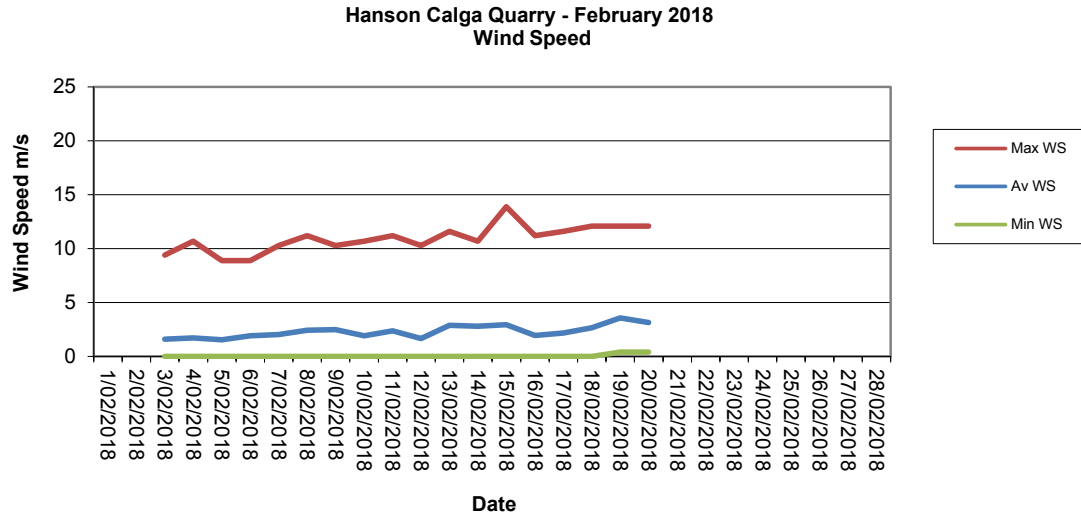
Summary Feb-18 Hanson - Calga

Date	Min Temp	Av Temp	Max Temp	Min %RH	Av %RH	Max %RH	RAIN mm	ET mm	Min WS	Av WS	Max WS	Min wind chill	Max Heat index	Min Atrm P	Av Atrm P	Max Atrm P	Min Solar Rad	Av Solar Rad	Max Solar Rad	Min Data %	Av data %	Max Data %
1/02/2018																						
2/02/2018																						
3/02/2018	15.2	17.8	21.4	62.0	83.3	96.0	4.4	2.6	0.0	1.6	9.4	15.2	21.5	1013.0	1015.0	1017.4	0.0	149.0	707.0	91.7	97.7	100.0
4/02/2018	14.6	18.4	23.4	55.0	80.7	96.0	5.0	3.7	0.0	1.7	10.7	14.6	24.0	1016.1	1018.4	1020.4	0.0	208.3	1140.0	89.5	96.3	100.0
5/02/2018	14.6	19.4	25.1	51.0	76.7	96.0	0.2	5.0	0.0	1.6	8.9	14.7	25.3	1017.0	1018.3	1019.9	0.0	288.7	1050.0	90.5	96.8	100.0
6/02/2018	15.7	21.2	28.4	43.0	72.1	94.0	0.0	5.7	0.0	1.9	8.9	15.7	28.7	1013.8	1016.1	1017.9	0.0	294.6	1094.0	22.5	54.4	80.9
7/02/2018	15.7	21.6	28.3	44.0	68.7	93.0	0.0	5.7	0.0	2.1	10.3	15.7	28.8	1015.3	1017.4	1019.0	0.0	296.0	1068.0	0.0	56.1	92.6
8/02/2018	15.7	21.6	28.4	46.0	69.6	91.0	0.0	5.7	0.0	2.4	11.2	15.7	29.3	1015.9	1016.9	1018.4	0.0	283.6	1243.0	0.0	48.8	75.4
9/02/2018	18.9	24.3	33.2	30.0	66.5	86.0	0.0	5.2	0.0	2.5	10.3	18.9	33.2	1009.3	1011.2	1016.1	0.0	247.2	985.0	0.0	63.8	91.1
10/02/2018	19.6	24.3	36.3	33.0	78.5	96.0	2.2	4.9	0.0	1.9	10.7	19.6	39.3	1005.6	1008.7	1013.1	0.0	232.7	1019.0	0.6	85.3	100.0
11/02/2018	20.7	25.2	33.0	44.0	68.6	90.0	1.0	5.7	0.0	2.4	11.2	20.7	36.7	1000.2	1002.9	1007.6	0.0	262.1	1023.0	26.2	50.6	77.8
12/02/2018	19.2	23.2	33.3	36.0	75.9	91.0	0.0	5.0	0.0	1.7	10.3	19.2	35.6	999.4	1003.3	1005.8	0.0	243.1	973.0	21.2	56.8	83.4
13/02/2018	21.4	24.4	31.4	39.0	75.2	91.0	0.0	5.2	0.0	2.9	11.6	21.4	34.1	1002.4	1006.4	1008.8	0.0	238.7	1072.0	23.4	64.4	96.3
14/02/2018	21.6	24.6	29.4	55.0	80.5	95.0	0.2	5.0	0.0	2.8	10.7	21.6	32.5	1004.2	1006.6	1008.6	0.0	261.9	1152.0	26.5	67.4	96.3
15/02/2018	20.1	27.4	37.9	10.0	49.6	80.0	0.0	8.0	0.0	3.0	13.9	20.1	35.6	1000.8	1007.4	1012.7	0.0	278.2	958.0	36.3	59.8	80.6
16/02/2018	16.2	23.0	30.4	21.0	75.0	96.0	0.2	5.7	0.0	2.0	11.2	16.3	32.4	1004.9	1006.8	1010.9	0.0	294.9	999.0	19.7	45.2	89.5
17/02/2018	17.9	23.2	32.5	19.0	67.4	92.0	0.2	5.8	0.0	2.2	11.6	17.9	31.4	1006.5	1010.0	1012.3	0.0	263.3	1077.0	54.8	79.3	92.3
18/02/2018	18.7	23.0	28.8	51.0	76.3	94.0	0.0	5.6	0.0	2.7	12.1	18.7	30.3	1007.9	1009.3	1011.3	0.0	269.2	1133.0	42.5	67.3	76.3
19/02/2018	21.3	25.1	32.1	50.0	71.4	91.0	0.0	6.2	0.4	3.6	12.1	21.3	35.8	1005.7	1007.2	1009.2	0.0	261.2	932.0	59.7	71.6	86.5
20/02/2018	18.3	22.0	28.4	51.0	76.1	94.0	38.8	3.9	0.4	3.2	12.1	18.3	30.1	1007.7	1011.1	1015.9	0.0	165.6	1016.0	44.3	77.9	100.0
21/02/2018																						
22/02/2018																						
23/02/2018																						
24/02/2018																						
25/02/2018																						
26/02/2018																						
27/02/2018																						
28/02/2018																						
Monthly	14.6	22.8	37.9	10	73	96	52.2	94.5	0	2.3	13.9	14.6	39.3	999.4	1010.7	1020.4	0	252.1	1243	0	68.9	100

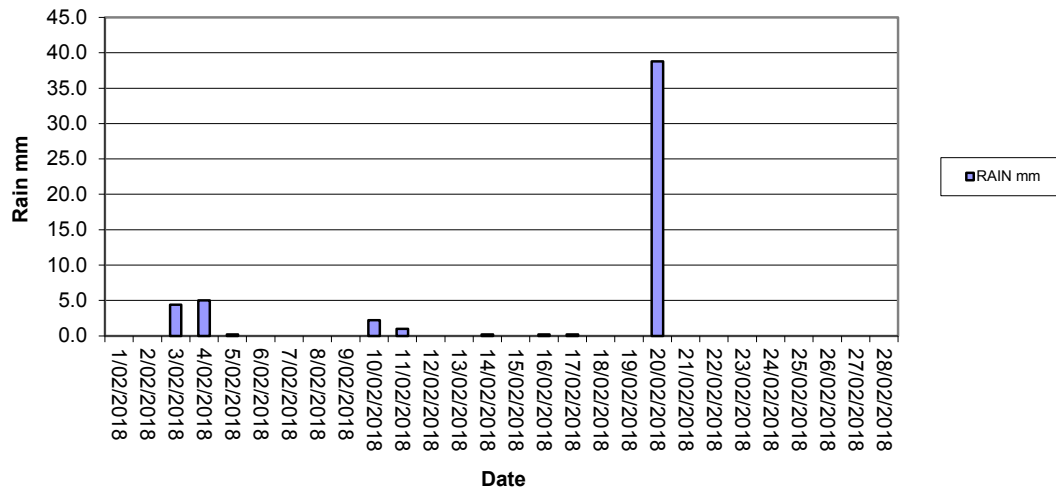
No data

2.4.2 Monthly Weather Charts

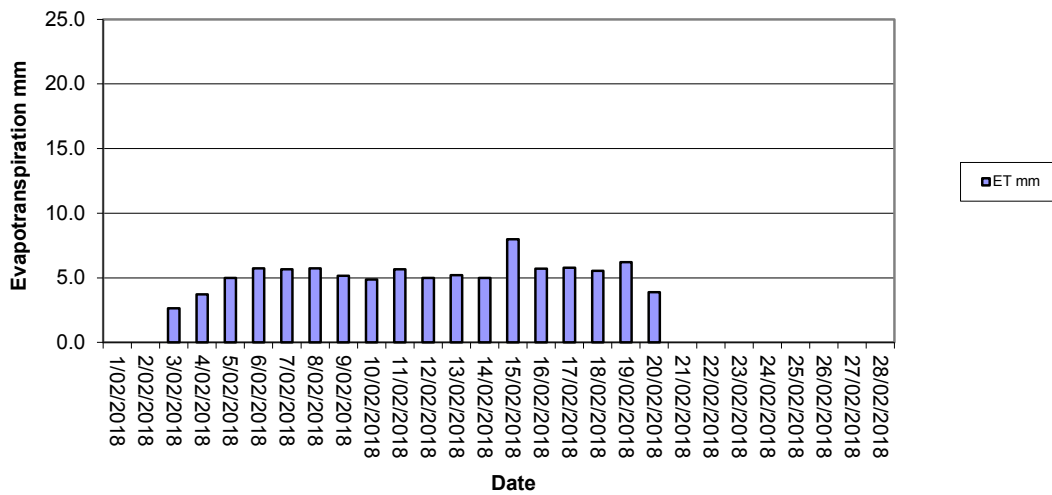




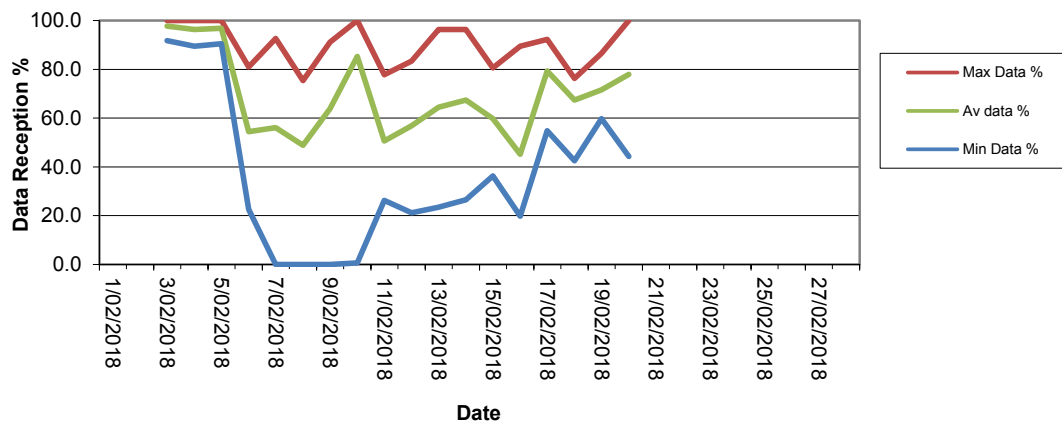
Hanson Calga Quarry - February 2018
Rainfall



Hanson Calga Quarry - February 2018
Evapotranspiration



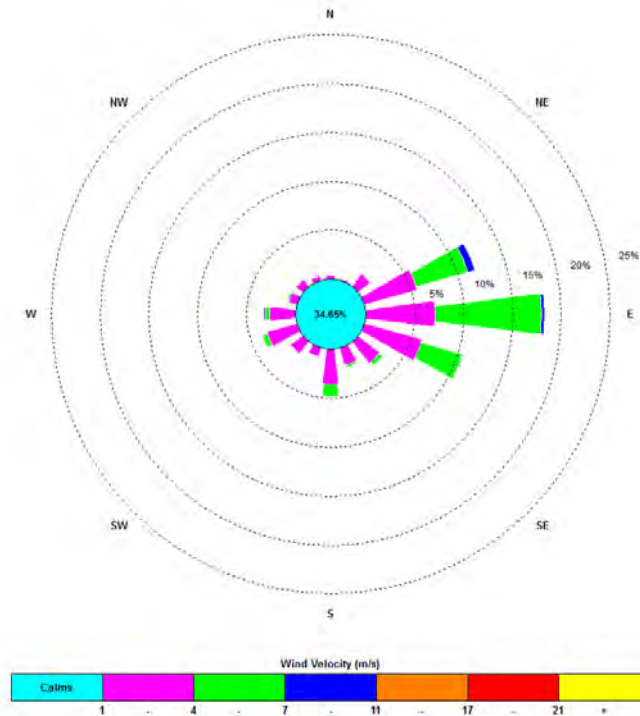
Hanson Calga Quarry - February 2018
Data Reception



2.4.3 Monthly Windrose Plot

Frequency plot of the average wind speed and average direction over each 15-minute sampling period. Wind is considered to be calm when at less than a 15-minute average of 1m/s.

00:15, 3 February 2018 – 09:00, 21 February 2018



The predominant and most frequent, strongest winds also from the E and ENE. The maximum wind speed was 13.9 m/s from the W.

Appendix 1

Field Sheets

Chain of Custody

Laboratory Certificates

DEPOSITIONAL DUST MONITORING

Client: **Hanson Calga Quarry**

Date Installed:2-18.....

Collection Start Time: 10:10

Sampled By: Leesa + Jill

Date Collected: 2-3-18

Collection Stop Time: 11:15

~~Sampling ID:~~

[illegible]

Turbidity: C=Clear, S= Slight, T=Turbid (CIRCLE)

Colour: C=Clear, O=Orange, Bn=Brown, Gn=Green, Gy = Grey (CIRCLE)

Report broken funnels and replacement diameters

Signed: SKJ

[illegible]

Telephone : + 61 2 4014 2500

CERTIFICATE OF ANALYSIS

Work Order : **EN1801895**
Client : **CBASED ENVIRONMENTAL PTY LTD**
Contact : MS RENAE MIKKA
Address : 47 BOOMERANG ST
 CESSNOCK NSW, AUSTRALIA 2325
Telephone : 02 6571 3334
Project : Hanson Calga Dusts
Order number : ----
C-O-C number : ----
Sampler : CARBON BASED ENVIRONMENTAL PTY LTD
Site :
Quote number : SYBQ/222/16 and PLANNED EVENTS
No. of samples received : 6
No. of samples analysed : 6

Page : 1 of 4
Laboratory : Environmental Division Newcastle
Contact :
Address : 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone : +61 2 4014 2500
Date Samples Received : 02-Mar-2018 13:45
Date Analysis Commenced : 06-Mar-2018
Issue Date : 12-Mar-2018 20:18



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

Signatories	Position	Accreditation Category
Dianne Blane	Laboratory Coordinator (2IC)	Newcastle - Inorganics, Mayfield West, NSW



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.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- Analysis as per AS3580.10.1-2016. 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: **DEPOSITIONAL DUST**
 (Matrix: **AIR**)

Client sample ID

				CD1 01/02/18-02/03/18	CD2c 01/02/18-02/03/18	CD3 01/02/18-02/03/18	CD4 01/02/18-02/03/18	CD5 01/02/18-02/03/18
Client sampling date / time				02-Mar-2018 00:00	02-Mar-2018 00:00	02-Mar-2018 00:00	02-Mar-2018 00:00	02-Mar-2018 00:00
Compound	CAS Number	LOR	Unit	EN1801895-001	EN1801895-002	EN1801895-003	EN1801895-004	EN1801895-005
				Result	Result	Result	Result	Result
EA120: Ash Content								
Ash Content	----	0.1	g/m ² .month	4.6	1.2	0.5	0.3	0.6
Ash Content (mg)	----	1	mg	78	20	8	5	11
EA125: Combustible Matter								
Combustible Matter	----	0.1	g/m ² .month	0.8	0.4	0.3	0.4	0.6
Combustible Matter (mg)	----	1	mg	14	7	6	7	9
EA141: Total Insoluble Matter								
Total Insoluble Matter	----	0.1	g/m ² .month	5.4	1.6	0.8	0.7	1.2
Total Insoluble Matter (mg)	----	1	mg	92	27	14	12	20



Analytical Results

Sub-Matrix: **DEPOSITIONAL DUST**
 (Matrix: **AIR**)

Client sample ID

				CD6	----	----	----	----
				01/02/18-02/03/18				
Client sampling date / time				02-Mar-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EN1801895-006	-----	-----	-----	-----
Result					----	----	----	----
EA120: Ash Content								
Ash Content	----	0.1	g/m ² .month	0.5	----	----	----	----
Ash Content (mg)	----	1	mg	9	----	----	----	----
EA125: Combustible Matter								
Combustible Matter	----	0.1	g/m ² .month	0.5	----	----	----	----
Combustible Matter (mg)	----	1	mg	8	----	----	----	----
EA141: Total Insoluble Matter								
Total Insoluble Matter	----	0.1	g/m ² .month	1.0	----	----	----	----
Total Insoluble Matter (mg)	----	1	mg	17	----	----	----	----



Date: 2.3.18

Todays Collection	
Time Start:	11:00
Time Finish:	12:40

Client :
Project :

Hanson Calga

SURFACE WATERS

Site	Flow Rate	Odour	Sampling Time	Bottles	Water Turbidity	Water Colour	Comments
A	NO access			1x 250ml GP, 1x 500mL GP, 1x PG	CST	CLOOBG	No access only access bridge has been taken away
B	dry			1x 250ml GP, 1x 500mL GP, 1x PG	CST	CLOOBG	
C1	DAM	NO	11:30	1x 250ml GP, 1x 500mL GP, 1x PG	CST	CLOOBG	
C2	Fast	NO	11:40	1x 250ml GP, 1x 500mL GP, 1x PG	CST	CLOOBG	
D	dry		11:00	1x 250ml GP, 1x 500mL GP, 1x PG	CST	CLOOBG	
F	DAM	NO	11:55	1x 250ml GP, 1x 500mL GP, 1x PG	CST	CLOOBG	
					CST	CLOOBG	
					CST	CLOOBG	
					CST	CLOOBG	
					CST	CLOOBG	
					CST	CLOOBG	

Turbidity: C=Clear, S= Slight, T=Turbid (CIRCLE)

Colour: C=Clear, LO=Light Orange, O=Orange, B=Brown, G=Green (CIRCLE)

Signed: SLY

Sampled by: Leena + Jill

[illegible]

Environmental Division
Sydney
Work Order Reference
ES1806503



Telephone : + 61-2-8784 8555

CERTIFICATE OF ANALYSIS

Work Order : **ES1806503**
Client : **CBASED ENVIRONMENTAL PTY LTD**
Contact : All Deliverables
Address : 47 BOOMERANG ST
 CESSNOCK NSW, AUSTRALIA 2325
Telephone : +61 02 6571 3334
Project : HANSON QUARRY SW
Order number : ----
C-O-C number : ----
Sampler : CARBON BASED ENVIRONMENTAL PTY LTD
Site :
Quote number : SYBQ/222/16 and PLANNED EVENTS
No. of samples received : 3
No. of samples analysed : 3

Page : 1 of 2
Laboratory : Environmental Division Sydney
Contact : Customer Services ES
Address : 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone : +61-2-8784 8555
Date Samples Received : 02-Mar-2018 11:27
Date Analysis Commenced : 02-Mar-2018
Issue Date : 09-Mar-2018 10:37



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Neil Martin	Team Leader - Chemistry	Chemistry, Newcastle West, NSW



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.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

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

- TDS by method EA-015 may bias high for sample 3 due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.

Analytical Results

Sub-Matrix: **WATER**
 (Matrix: **WATER**)

Client sample ID

				C1	C2	F	----	----
Client sampling date / time				02-Mar-2018 11:30	02-Mar-2018 11:40	02-Mar-2018 11:55	----	----
Compound	CAS Number	LOR	Unit	ES1806503-001	ES1806503-002	ES1806503-003	-----	-----
				Result	Result	Result	----	----
EA005: pH								
pH Value	----	0.01	pH Unit	7.32	6.63	5.09	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	115	118	102	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	65	65	84	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	12	6	22	----	----
EP020: Oil and Grease (O&G)								
Oil & Grease	----	5	mg/L	<5	<5	<5	----	----