

CERTIFICATE OF ANALYSIS

Work Order : **EW1701013**
Client : **WOLLONGONG CITY COUNCIL**
Contact : MR WAYDE PETERSON
Address : 41 BURELLI STREET
 WOLLONGONG NSW, AUSTRALIA 2500

Telephone : +61 02 4227 7111
Project : Whytes Gully Storm Water Overflow
Order number : 3058354
C-O-C number : ----
Sampler : Glenn Davies
Site : ----
Quote number : SY/454/14 Tender
No. of samples received : 4
No. of samples analysed : 4

Page : 1 of 4
Laboratory : Environmental Division NSW South Coast
Contact : Glenn Davies
Address : 1/19 Ralph Black Dr, North Wollongong 2500
 4/13 Geary Pl, North Nowra 2541
 Australia
Telephone : 02 42253125
Date Samples Received : 07-Mar-2017 14:50
Date Analysis Commenced : 07-Mar-2017
Issue Date : 14-Mar-2017 16:39



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. 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>
Ashesh Patel	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Dian Dao		Sydney Inorganics, Smithfield, NSW
Robert DaLio	Sampler	Laboratory - Wollongong



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 no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component.

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.



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Point 1 (Point 1)	Point 4 (Point 33)	Point 6 (Point 34)	POND	----
Client sampling date / time					07-Mar-2017 13:45	07-Mar-2017 13:25	07-Mar-2017 13:35	07-Mar-2017 13:50	----
Compound	CAS Number	LOR	Unit		EW1701013-001	EW1701013-002	EW1701013-003	EW1701013-004	-----
					Result	Result	Result	Result	----
EA005FD: Field pH									
pH	----	0.1	pH Unit		7.3	7.0	7.0	8.2	----
EA010FD: Field Conductivity									
Electrical Conductivity (Non Compensated)	----	1	µS/cm		523	307	348	509	----
EA025: Suspended Solids									
Suspended Solids (SS)	----	5	mg/L		28	19	6	44	----
EA116: Temperature									
Temperature	----	0.1	°C		22.1	20.9	20.3	23.6	----
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		163	88	95	160	----
Total Alkalinity as CaCO3	----	1	mg/L		163	88	95	160	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		20	18	21	18	----
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		48	31	36	47	----
ED093T: Total Major Cations									
Calcium	7440-70-2	1	mg/L		27	20	26	26	----
Magnesium	7439-95-4	1	mg/L		14	9	12	14	----
Sodium	7440-23-5	1	mg/L		58	28	25	57	----
Potassium	7440-09-7	1	mg/L		12	4	3	12	----
EG020F: Dissolved Metals by ICP-MS									
Iron	7439-89-6	0.05	mg/L		0.25	0.14	0.07	0.16	----
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		0.2	<0.1	<0.1	0.2	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		0.66	0.06	0.02	0.98	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		0.46	0.02	<0.01	0.42	----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		0.66	0.32	0.16	0.12	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Point 1 (Point 1)	Point 4 (Point 33)	Point 6 (Point 34)	POND	----
Client sampling date / time				07-Mar-2017 13:45	07-Mar-2017 13:25	07-Mar-2017 13:35	07-Mar-2017 13:50	----	
Compound	CAS Number	LOR	Unit	EW1701013-001	EW1701013-002	EW1701013-003	EW1701013-004	-----	
				Result	Result	Result	Result	----	
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser - Continued									
Nitrite + Nitrate as N	----	0.01	mg/L	1.12	0.34	0.16	0.54	----	
EP005: Total Organic Carbon (TOC)									
Total Organic Carbon	----	1	mg/L	16	6	3	19	----	
EP025FD: Field Dissolved Oxygen									
Dissolved Oxygen	----	0.01	mg/L	5.79	8.25	8.59	9.03	----	
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	0.05	mg/L	<0.05	<0.05	<0.05	<0.05	----	