



CERTIFICATE OF ANALYSIS

Work Order : **EW1600021**
Client : **WOLLONGONG CITY COUNCIL**
Contact : **MR WAYDE PETERSON**
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WOLLONGONG NSW, AUSTRALIA 2500

E-mail : **wpeterson@wollongong.nsw.gov.au**
Telephone : **+61 02 4227 7111**
Facsimile : **+61 02 4227 7277**
Project : **Whytes Gully Storm Water Overflow**
Order number : **3044522**
C-O-C number : **----**
Sampler : **Craig Wilson**
Site : **----**

Quote number : **----**

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Laboratory : **Environmental Division NSW South Coast**
Contact : **Glenn Davies**
Address : **1/19 Ralph Black Dr, North Wollongong 2500**
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Australia
E-mail : **glenn.davies@alsglobal.com**
Telephone : **02 42253125**
Facsimile : **W 02 42253128 N 02 44232083**
QC Level : **NEPM 2013 B3 & ALS QC Standard**
Date Samples Received : **05-Jan-2016 12:40**
Date Analysis Commenced : **05-Jan-2016**
Issue Date : **12-Jan-2016 14:36**

No. of samples received : **3**
No. of samples analysed : **3**

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results



NATA Accredited Laboratory 825
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.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Glenn Davies	Environmental Services Representative	Laboratory - Wollongong
Hoa Nguyen	Senior Inorganic Chemist	Sydney Inorganics, Smithfield, 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.

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

∅ = ALS is not NATA accredited for these tests.

- Field tests completed on day of sampling/receipt.
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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	Point 1 (Point 1)	Point 4 (Point 33)	Point 6 (Point 34)	----	----
Client sampling date / time				05-Jan-2016 11:50	05-Jan-2016 11:40	05-Jan-2016 12:05	----	----	
Compound	CAS Number	LOR	Unit	EW1600021-001	EW1600021-002	EW1600021-003	-----	-----	
				Result	Result	Result	Result	Result	
EA005FD: Field pH									
pH	----	0.1	pH Unit	8.0	7.3	7.9	----	----	
EA010FD: Field Conductivity									
Electrical Conductivity (Non Compensated)	----	1	µS/cm	829	349	394	----	----	
EA025: Suspended Solids									
Suspended Solids (SS)	----	5	mg/L	18	42	13	----	----	
EA116: Temperature									
Temperature	----	0.1	°C	21.2	20.3	19.2	----	----	
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO ₃	DMO-210-001	1	mg/L	<1	<1	<1	----	----	
Carbonate Alkalinity as CaCO ₃	3812-32-6	1	mg/L	<1	<1	<1	----	----	
Bicarbonate Alkalinity as CaCO ₃	71-52-3	1	mg/L	194	81	105	----	----	
Total Alkalinity as CaCO ₃	----	1	mg/L	194	81	105	----	----	
ED041G: Sulfate (Turbidimetric) as SO₄ 2- by DA									
Sulfate as SO ₄ - Turbidimetric	14808-79-8	1	mg/L	32	28	30	----	----	
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L	126	35	37	----	----	
ED093T: Total Major Cations									
Calcium	7440-70-2	1	mg/L	30	23	32	----	----	
Magnesium	7439-95-4	1	mg/L	21	11	15	----	----	
Sodium	7440-23-5	1	mg/L	122	35	33	----	----	
Potassium	7440-09-7	1	mg/L	17	4	4	----	----	
EG020F: Dissolved Metals by ICP-MS									
Iron	7439-89-6	0.05	mg/L	<0.05	0.13	0.14	----	----	
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L	0.4	0.2	0.2	----	----	
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L	0.10	0.02	0.03	----	----	
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L	0.03	<0.01	<0.01	----	----	
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L	0.44	0.33	0.45	----	----	
EK059G: Nitrite plus Nitrate as N (NO_x) by Discrete Analyser									



Analytical Results

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Client sampling date / time					05-Jan-2016 11:50	05-Jan-2016 11:40	05-Jan-2016 12:05	----	----
Compound	CAS Number	LOR	Unit		EW1600021-001	EW1600021-002	EW1600021-003	-----	-----
					Result	Result	Result	Result	Result
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser - Continued									
Nitrite + Nitrate as N	----	0.01	mg/L		0.47	0.33	0.45	----	----
EP005: Total Organic Carbon (TOC)									
Total Organic Carbon	----	1	mg/L		16	5	6	----	----
EP025FD: Field Dissolved Oxygen									
Dissolved Oxygen	----	0.01	mg/L		8.09	7.84	8.99	----	----
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	0.05	mg/L		<0.05	<0.05	<0.05	----	----