Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EW1402271**	Page	: 1 of 4
Client	: **WOLLONGONG CITY COUNCIL**	Laboratory	: Environmental Division NSW South Coast
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Project	: Whytes Gully Stormwater Annual Overflow	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: 3030159		
C-O-C number	: ----	Date Samples Received	: 29-JUL-2014
Sampler	: Craig Wilson	Issue Date	: 05-AUG-2014
Site	: ----		
		No. of samples received	: 3
Quote number	: WL/001/11 Whytes Gully Stormwater	No. of samples analysed	: 3

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 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.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics
Glenn Davies	Environmental Services Representative	Laboratory - Wollongong
Shobhna Chandra	Metals Coordinator	Sydney Inorganics

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

- **Sampling and sample data supplied by ALS Wollongong.**

Analytical Results

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

Compound	CAS Number	LOR	Unit	Client sample ID: Point 1	Point 4	Point 6	----	----
				Client sampling date / time: 29-JUL-2014 12:30	29-JUL-2014 11:55	29-JUL-2014 12:20	----	----
				EW1402271-001	EW1402271-002	EW1402271-003	----	----
EA025: Suspended Solids								
Suspended Solids (SS)	----	5	mg/L	**10**	**11**	**6**	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**134**	**186**	**192**	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**134**	**186**	**192**	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**41**	**2**	**41**	----	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	**127**	**62**	**56**	----	----
ED093T: Total Major Cations								
Calcium	7440-70-2	1	mg/L	**35**	**36**	**54**	----	----
Magnesium	7439-95-4	1	mg/L	**20**	**19**	**24**	----	----
Sodium	7440-23-5	1	mg/L	**85**	**55**	**48**	----	----
Potassium	7440-09-7	1	mg/L	**2**	**3**	**3**	----	----
EG020F: Dissolved Metals by ICP-MS								
Iron	7439-89-6	0.05	mg/L	<0.05	**5.02**	<0.05	----	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	**1.1**	**0.2**	**0.1**	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.10**	**0.09**	**0.06**	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	----	0.01	mg/L	<0.01	<0.01	**0.01**	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**0.11**	<0.01	**0.08**	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.11**	<0.01	**0.09**	----	----
EN67 PK: Field Tests								
pH	----	0.1	pH Unit	**8.1**	**7.1**	**7.8**	----	----
Electrical Conductivity (Non Compensated)	----	1	µS/cm	**756**	**598**	**644**	----	----
Dissolved Oxygen	----	0.01	mg/L	**9.78**	**2.28**	**8.47**	----	----
Temperature	----	0.1	°C	**12.8**	**13.8**	**13.8**	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	Point 1	Point 4	Point 6	----	----
			Client sampling date / time	29-JUL-2014 12:30	29-JUL-2014 11:55	29-JUL-2014 12:20	----	----
Compound	CAS Number	LOR	Unit	EW1402271-001	EW1402271-002	EW1402271-003	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	**4**	**4**	**2**	----	----
EP035G: Total Phenol by Discrete Analyser								
Phenols (Total)	----	0.05	mg/L	<0.05	<0.05	<0.05	----	----