



Environmental

CERTIFICATE OF ANALYSIS

Work Order	: EW1400723	Page	: 1 of 5
Client	: SHOALHAVEN CITY COUNCIL	Laboratory	: Environmental Division NSW South Coast
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Project	: Huskisson Landfill Quarterly	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: 15435 16780	Date Samples Received	: 07-MAR-2014
C-O-C number	: ----	Issue Date	: 21-MAR-2014
Sampler	: ----	No. of samples received	: 15
Site	: ----	No. of samples analysed	: 15
Quote number	: ----		

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.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ankit Joshi	Inorganic Chemist	Sydney Inorganics
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Glenn Davies	Environmental Services Representative	Laboratory - Wollongong
Shobhna Chandra	Metals Coordinator	Sydney Inorganics

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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

- **EW1400723/1, 2, 3, 8 and 9, a sample was not able to be taken for analysis due to the pond being dry.**



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

Client sampling date / time

				S1	S2	GA 1	GA 2	GA 4
				07-MAR-2014 12:00	07-MAR-2014 12:05	07-MAR-2014 12:10	07-MAR-2014 11:55	07-MAR-2014 12:40
Compound	CAS Number	LOR	Unit	EW1400723-001	EW1400723-002	EW1400723-003	EW1400723-004	EW1400723-005
EA015: Total Dissolved Solids								
Total Dissolved Solids @180°C	----	1	mg/L	----	----	----	3600	1030
ED037P: Alkalinity by PC Titrator								
Total Alkalinity as CaCO3	----	1	mg/L	----	----	----	63	51
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	----	----	----	338	109
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	----	----	----	1960	521
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	----	----	----	64	24
Magnesium	7439-95-4	1	mg/L	----	----	----	203	53
Sodium	7440-23-5	1	mg/L	----	----	----	1020	287
Potassium	7440-09-7	1	mg/L	----	----	----	11	8
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	----	----	----	0.08	0.03
EN67 PK: Field Tests								
pH	----	0.1	pH Unit	----	----	----	5.6	5.6
Field Observations	----	0.01	--	Dry	Dry	Dry	----	----
Standing Water Level	----	0.01	m AHD	----	----	----	1.65	7.36
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	----	----	----	11	2



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

Client sampling date / time

				GA 5	GA 6	GA 7	GA 8	GA 9
				07-MAR-2014 13:20	07-MAR-2014 12:50	07-MAR-2014 12:25	07-MAR-2014 11:35	07-MAR-2014 12:15
Compound	CAS Number	LOR	Unit	EW1400723-006	EW1400723-007	EW1400723-008	EW1400723-009	EW1400723-010
EA015: Total Dissolved Solids								
Total Dissolved Solids @180°C	----	1	mg/L	3780	547	----	----	----
ED037P: Alkalinity by PC Titrator								
Total Alkalinity as CaCO3	----	1	mg/L	133	<1	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	263	132	----	----	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	2250	207	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	75	1	----	----	----
Magnesium	7439-95-4	1	mg/L	226	18	----	----	----
Sodium	7440-23-5	1	mg/L	1140	156	----	----	----
Potassium	7440-09-7	1	mg/L	16	<1	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.24	0.04	----	----	----
EN67 PK: Field Tests								
pH	----	0.1	pH Unit	5.6	4.7	----	----	----
Field Observations	----	0.01	--	----	----	Dry	Dry	Dry
Standing Water Level	----	0.01	m AHD	3.47	6.82	----	----	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	7	6	----	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

Client sampling date / time

				GA 10	GA 11	GA 12	DUP	BLANK
				07-MAR-2014 12:55	07-MAR-2014 13:05	07-MAR-2014 13:00	07-MAR-2014 11:55	07-MAR-2014 12:00
Compound	CAS Number	LOR	Unit	EW1400723-011	EW1400723-012	EW1400723-013	EW1400723-014	EW1400723-015
EA015: Total Dissolved Solids								
Total Dissolved Solids @180°C	----	1	mg/L	591	407	2590	3260	<1
ED037P: Alkalinity by PC Titrator								
Total Alkalinity as CaCO3	----	1	mg/L	69	3	<1	60	<1
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	153	63	270	307	<1
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	177	171	1250	1670	<1
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	21	<1	2	58	<1
Magnesium	7439-95-4	1	mg/L	18	6	121	184	<1
Sodium	7440-23-5	1	mg/L	154	123	825	994	<1
Potassium	7440-09-7	1	mg/L	5	<1	2	11	<1
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	0.14	0.03	0.03	0.10	<0.01
EN67 PK: Field Tests								
pH	----	0.1	pH Unit	5.7	6.6	3.5	5.5	6.7
Standing Water Level	----	0.01	m AHD	8.53	7.28	8.68	1.65	----
EP005: Total Organic Carbon (TOC)								
Total Organic Carbon	----	1	mg/L	15	3	6	11	<1