BOC Kooragang Cooling Tower Wastewater Sampling Report

BOC Limited Kooragang Island

19 September 2014



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1 Introduction

BOC Limited Kooragang Island, herein referred to as BOC Kooragang, owns and operates a gas facility for the production and supply of gas products located at 9 Egret Street Kooragang, New South Wales. The facility operates 24 hours per day, 7 days per week. BOC Kooragang holds NSW Environmental Protection Authority (EPA) Environmental Protection Licence (EPL) 20165. The Scheduled Activities in the EPL include chemical storage waste generation, dangerous goods production and general chemicals storage.

BOC Kooragang currently possess two (2) cooling towers onsite. Currently the cooling tower blowdown (waste) water continues to two (2) 10,000 litre capacity storage tanks onsite, totalling a capacity of 20,000 litres storage onsite. The wastewater is collected by an approved waste contractor approximately once per week.

BOC Kooragang are researching the possibility of utilising the cooling tower wastewater for irrigation purposes in specific grassed areas of the site. In order to research the possibility of utilising the cooling tower wastewater onsite MJM Environmental (MJM) was engaged by BOC Kooragang in August 2014 to undertake water sampling and analysis for a period of three (3) weeks for three (3) samples in total.

This report outlines the results of the wastewater sampling carried out over the three weeks.

2 Site Identification

BOC Kooragang operates a gas facility located at 9 Egret Street Kooragang, New South Wales. The plant vicinity map and location of the cooling towers and wastewater storage tanks are shown in Figure 2-1 and Figure 2-2.



Figure 2-1: BOC Limited Kooragang Vicinity



Figure 2-2: Location of BOC Limited's Cooling Towers and Wastewater Tanks

3 Sampling Plan and Methodology

Three (3) samples are proposed to be taken from the wastewater tanks over a period of three (3) weeks. This report presents the results from all three sampling events.

The analytes tested are presented in Table 3-1, which are taken from the Australian and New Zealand Environment and Conservation Council (ANZECC) 2000 guidelines. The water sampling analysis results were compared to the ANZECC guidelines presented in Section 4: Primary Industries - 4.2 Water Quality for irrigation and general water use.

	Analytes	
рН	Herbicides	Iron
Enterococci	Pesticides	Lead
Faecal (thermotolerant) Coliforms	Cadmium	Lithium
Electrical conductivity	Zinc	Manganese
Sodium Absorption Ratio (sodicity)	Aluminium	Mercury
Alkalinity as calcium carbonate (hardness)	Arsenic	Molybdenum
Chloride	Beryllium	Nickel
Sodium	Boron	Selenium
Fluoride	Chromium VI	Uranium
Nitrogen (total)	Cobalt	Vanadium
Phosphorus	Copper	

Table 3-1: Cooling Tower Wastewater Sampling Analytes

3.1 Sampling Handling Procedures

Sampling was performed in accordance with ANZECC monitoring standards (AS/NZS 5667.1:1998 and AS/NZS 5667.11:1998). These procedures include the documentation of the name and location of the sample point, date and time of sample collection, the type of sample point, method of sample collection and sample appearance at the time of collection. The water samples were then transferred into clean plastic bottles provided by a NATA accredited laboratory. The NATA laboratory results are presented in Appendix A and field notes in Appendix B.

4 Results

The results for the cooling tower wastewater sampling are presented in Table 4-1 below.

Table 4-1: BOC Limited Cooling Tower Wastewater Sampling Results

Analyte	Units	Result (27/08/2014)	Result (3/09/2014)	Result (11/09/2014)	Average	Recommended Irrigation Thresholds ¹
рН	pH Unit	7.85	7.95	7.83	7.88	6 – 9
Enterococci	CFU/100mL	~9	~4	<1	5	-
Faecal (thermo tolerant) Coliforms	CFU/100mL	<1	<1	<1	<1	<10,000 4
Electrical conductivity	μS/cm	1,670	1,690	1,650	1,670	-
Sodium Absorption Ratio	-	5.2	4.61	4.32	4.7	-
Alkalinity as calcium carbonate (hardness)	mg/L	60	58	68	62	-
Chloride	mg/L	294	292	349	312	-
Sodium	mg/L	223	198	179	200	-
Fluoride	mg/L	7.7	7.3	7.5	7.5	1.0 ² 2.0 ³
Nitrogen (total)	mg/L	11.0	10.0	8.9	10.0	25 - 125 ² 5 ³
Phosphorus	mg/L	3.62	2.77	4.17	3.52	0.8 - 12 ² 0.05 ³
Cadmium	mg/L	<0.0001	0.0001	<0.0001	0.0001	0.01 ² 0.05 ³
Zinc	mg/L	0.025	0.025	0.018	0.023	2.0 ² 5.0 ³
Aluminium	mg/L	0.04	0.07	0.04	0.05	5.0 ² 20 ³
Arsenic	mg/L	0.003	0.003	0.003	0.003	0.1 ² 2.0 ³
Beryllium	mg/L	<0.001	<0.001	<0.001	<0.001	0.1 ² 0.5 ³

Analyte	Units	Result (27/08/2014)	Result (3/09/2014)	Result (11/09/2014)	Average	Recommended Irrigation Thresholds 1
Boron	mg/L	0.2	0.22	0.17	0.2	0.5
	J,	-		-		2-4 ⁵
Chromium VI	mg/L	<0.01	<0.01	<0.01	<0.01	0.1 ² 1.0 ³
Cobalt	mg/L	<0.001	<0.001	<0.001	<0.001	0.05 ² 0.1 ³
Copper	mg/L	0.154	0.136	0.146	0.145	0.2 ² 5.0 ³
Iron	mg/L	0.1	0.1	0.07	0.09	0.2 ² 10 ³
Lead	mg/L	<0.001	<0.001	<0.001	<0.001	2.0 ² 5.0 ³
Lithium	mg/L	0.005	0.005	0.005	0.005	2.5 ² 2.5 ³
Manganese	mg/L	0.008	0.007	0.007	0.007	0.2 ² 10 ³
Mercury	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	0.002 ² 0.002 ³
Molybdenum	mg/L	0.002	0.002	0.002	0.002	0.01 ² 0.05 ³
Nickel	mg/L	0.003	0.003	0.003	0.003	0.2 ² 2.0 ³
Selenium	mg/L	<0.01	<0.01	<0.01	<0.01	0.02 ² 0.05 ³
Uranium	mg/L	<0.001	<0.001	<0.001	<0.001	0.01 ² 0.1 ³
Vanadium	mg/L	<0.01	<0.01	<0.01	<0.01	0.1 ² 0.5 ³
Herbicide (Phenoxyacetic Acid Herbicides	<u> </u>		1			
4-Chlorophenoxy acetic acid	μg/L	<10	<10	<10	<10	1,000 ⁶
2.4-DB	μg/L	<10	<10	<10	<10	1,000
Dicamba	μg/L	<10	<10	<10	<10	1,000
Mecoprop	μg/L	<10	<10	<10	<10	1,000
MCPA	μg/L	<10	<10	<10	<10	1,000
2.4-DP	μg/L	<10	<10	<10	<10	1,000
2.4-D	μg/L	<10	<10	<10	<10	1,000
Triclopyr	μg/L	<10	<10	<10	<10	1,000
2.4.5-TP (Silvex)	μg/L	<10	<10	<10	<10	1,000
2.4.5-T	μg/L	<10	<10	<10	<10	1,000
MCPB	μg/L	<10	<10	<10	<10	1,000

Analyte	Units	Result	Result	Result	Average	Recommended Irrigation
	/1	(27/08/2014)	(3/09/2014)	(11/09/2014)		Thresholds ¹
Picloram	μg/L	<10	<10	<10	<10	1,000
Clopyralid	μg/L	<10	<10	<10	<10	1,000
Fluroxypyr	μg/L	<10	<10	<10	<10	1,000
2.6-D	μg/L	<10	<10	<10	<10	1,000
2.4.6-T	μg/L	<10	<10	<10	<10	1,000
Pesticide (Organochlorine Pesticides)		1	•			
alpha-BHC	μg/L	<0.5	<0.5	<0.5	<0.5	1,000 ⁶
Hexachlorobenzene (HCB)	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
beta-BHC	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
gamma-BHC	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
delta-BHC	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
Heptachlor	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
Aldrin	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
Heptachlor epoxide	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
trans-Chlordane	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
alpha-Endosulfan	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
cis-Chlordane	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
Dieldrin	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
4.4-DDE	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
Endrin	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
beta-Endosulfan	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
4.4-DDD	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
Endrin aldehyde	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
Endosulfan sulfate	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
4.4`-DDT	μg/L	<2.0	<2.0	<2.0	<2.0	1,000
Endrin ketone	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
Methoxychlor	μg/L	<2.0	<2.0	<2.0	<2.0	1,000
Pesticide (Organophosphorus Pesticides)	1 170	-	-	<u> </u>	-	,
Dichlorvos	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
Demeton-S-methyl	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
Monocrotophos	μg/L	<2.0	<2.0	<2.0	<2.0	1,000
Dimethoate	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
Diazinon	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
Chlorpyrifos-methyl	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
Parathion-methyl	μg/L	<2.0	<2.0	<2.0	<2.0	1,000
Malathion	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
Fenthion	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
Chlorpyrifos	μg/L μg/L	<0.5	<0.5	<0.5	<0.5	1,000
Parathion		<0.5	<2.0	<0.5	<0.5 <2.0	1,000
Pirimphos-ethyl	μg/L μg/L	<2.0 <0.5	<2.0 <0.5	<2.0 <0.5	<2.0 <0.5	1,000

Analyte	Units	Result (27/08/2014)	Result (3/09/2014)	Result (11/09/2014)	Average	Recommended Irrigation Thresholds ¹
Chlorfenvinphos	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
Bromophos-ethyl	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
Fenamiphos	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
Prothiofos	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
Ethion	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
Carbophenothion	μg/L	<0.5	<0.5	<0.5	<0.5	1,000
Azinphos Methyl	μg/L	<0.5	<0.5	<0.5	<0.5	1,000

¹ Australian and New Zealand Environment and Conservation Council (ANZECC) 2000 guidelines - Section 4: Primary Industries - 4.2 Water Quality for irrigation and general water use.

² Short-term trigger value (STV) – The STV is the maximum concentration (mg/L) of contaminant in the irrigation water which can be tolerated for a shorter period of time (20 years).

³ Long-term trigger value (LTV) – The LTV is the maximum concentration (mg/L) of contaminant in the irrigation water which can be tolerated assuming 100 years of irrigation.

⁴ Trigger value chosen for areas with restricted public access.

⁵ Trigger value chosen for moderately tolerant crops.

⁶ General limit set for herbicides for NSW.

5 Discussion

MJM Environmental was engaged by BOC Kooragang to investigate the possibility of utilising the cooling tower wastewater stored onsite for irrigation purposes by taking three separate samples over a three week period. The results were compared to the Australian and New Zealand Environment and Conservation Council (ANZECC) 2000 guidelines. The results for the wastewater samples taken on 27 August 2014, 3 September 2014 and 11 September 2014 are presented above.

The Short-term Trigger Values (STV) and Long-term Trigger Values (LTV) presented in Table 4-1 are recommendations from the ANZECC guidelines.

From Table 4-1 it can be seen that Fluoride exceeded the STV and LTV for all three samples with an average of 7.5 mg/L. It is noted that the guidelines state 'the LTV has been set on the assumption that irrigation water could potentially be phytotoxic to sensitive plant or contaminate stock drinking water'.

Nitrogen (total) was within the STV range, however exceeded the LTV for all three samples with an average of 10.0 mg/L. It is noted that the guidelines state for nitrogen that 'the LTV has been set at a concentration low enough to ensure no decrease in crop yields or quality due to excessive nitrogen concentrations during later flowering and fruiting stages'.

Phosphorus concentrations for all three samples also exceeded the LTV with an average of 3.52 mg/L. However it is noted that the guidelines state the LTV for phosphorus is set 'to minimise bioclogging of irrigation equipment only'.

Pesticides and herbicides were not detected.

The remaining analytes were compliant with the recommended threshold levels.

BOC Wastewater Sampling	BOC Limited Kooragang Island
Appendix A – NATA Laboratory Results	



CERTIFICATE OF ANALYSIS

Work Order : **ES1418968** Page : 1 of 7

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Project : 0341264 QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement Order number : 49264222

 C-O-C number
 : -- Date Samples Received
 : 27-AUG-2014

 Sampler
 : AB
 Issue Date
 : 03-SFP-2014

Sampler : AB Issue Date : 03-SEP-2014 Site : ----

No. of samples received : 1

Quote number : SY/508/14

No. of samples analysed : 1

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
- Surrogate Control Limits



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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.

Position	Accreditation Category
Inorganic Chemist	Sydney Inorganics
Inorganic Chemist	Sydney Inorganics
Senior Spectroscopist	Sydney Inorganics
Senior LCMS Chemist	Sydney Organics
Supervisor - Inorganic	Newcastle - Inorganics
Senior Organic Chemist	Sydney Organics
Senior Microbiologist	Sydney Microbiology
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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

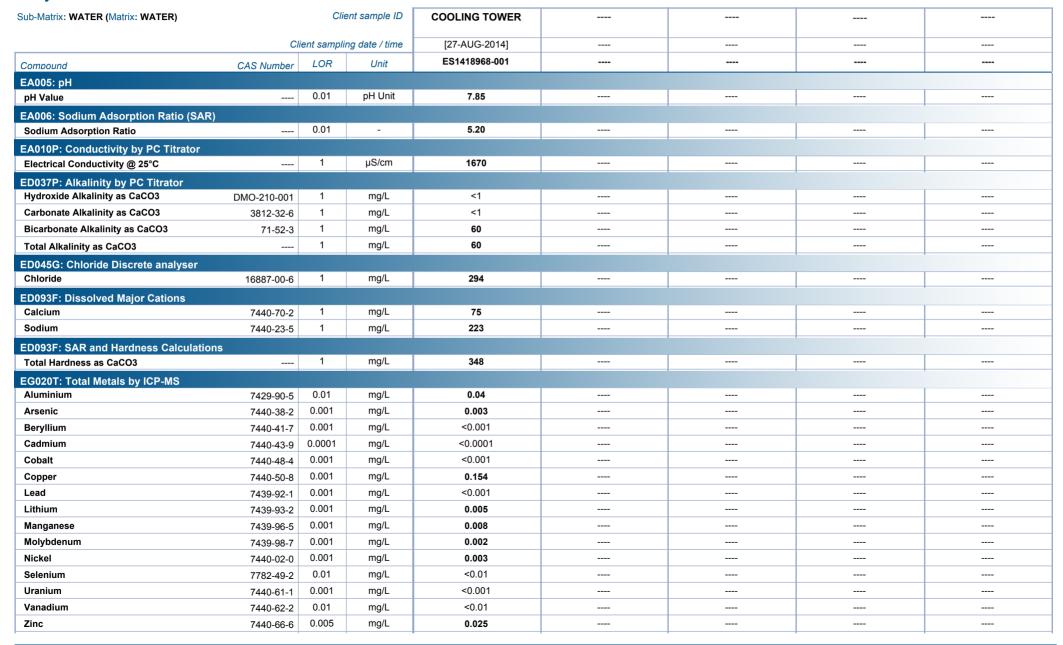
^ = This result is computed from individual analyte detections at or above the level of reporting

- EP202: Poor matrix spike recovery for Picloram and Clopyralid due to sample matrix effects. Confirmed by re-analysis.
- Microbiological Comment: Membrane filtration (MF) results for MW023 are reported as an estimate (~) when the growth of bacteria on the filter membrane is counted <10cfu and/or >100cfu.
- MW006 is ALS's internal code and is equivalent to AS4276.7.
- MW023 is ALS's internal code and is equivalent to AS4276.9.

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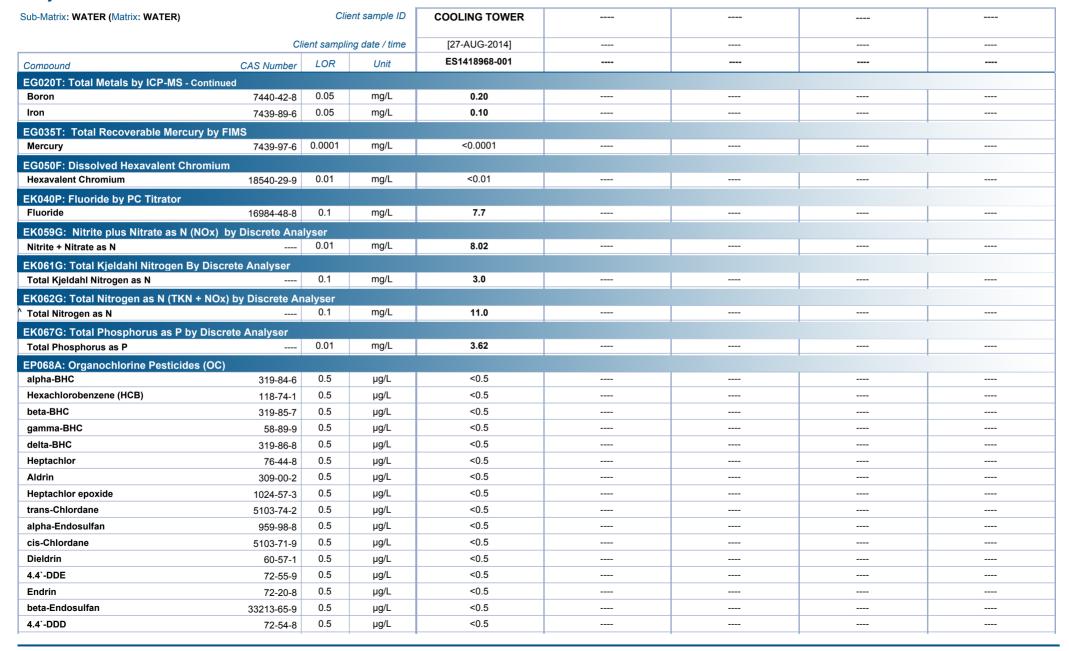




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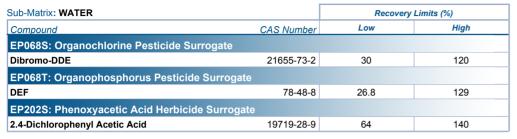


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Surrogate Control Limits







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Project : 0341264 QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement Order number : 49264222

 C-O-C number
 : --- Date Samples Received
 : 03-SEP-2014

 Sampler
 : AB
 Issue Date
 : 09-SEP-2014

Site : ----

Quote number : SY/508/14 No. of samples received : 1

No. of samples analysed : 1

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- General Comments
- Analytical Results
- Surrogate Control Limits



NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

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Senior Spectroscopist	Sydney Inorganics
	Sydney Inorganics
Organic Coordinator	Sydney Organics
Senior LCMS Chemist	Sydney Organics
Supervisor - Inorganic	Newcastle - Inorganics
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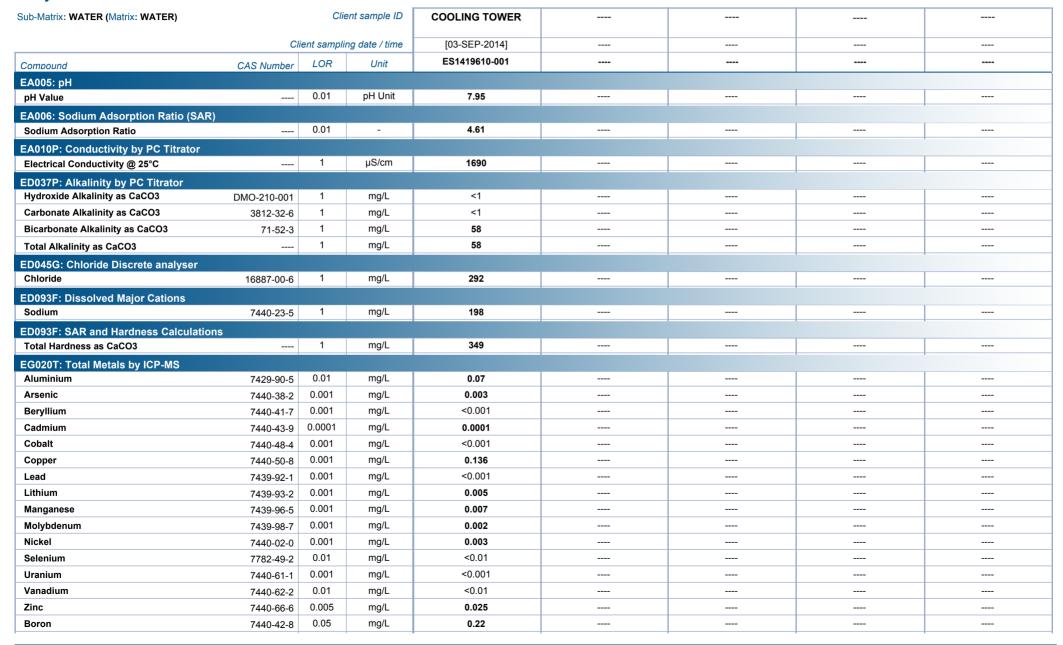
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- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP202: Poor matrix spike recoveries for Picloram and Clopyralid due to matrix effects.
- Microbiological Comment: Membrane filtration (MF) results for MW023 are reported as an estimate (~) when the growth of bacteria on the filter membrane is counted <10cfu and/or >100cfu.
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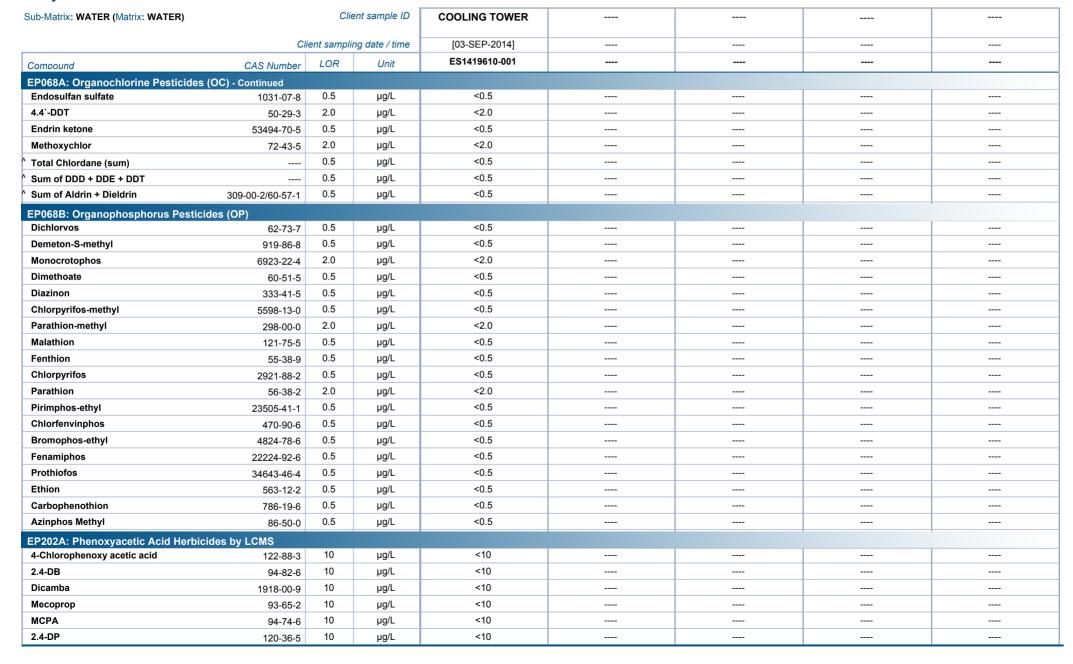




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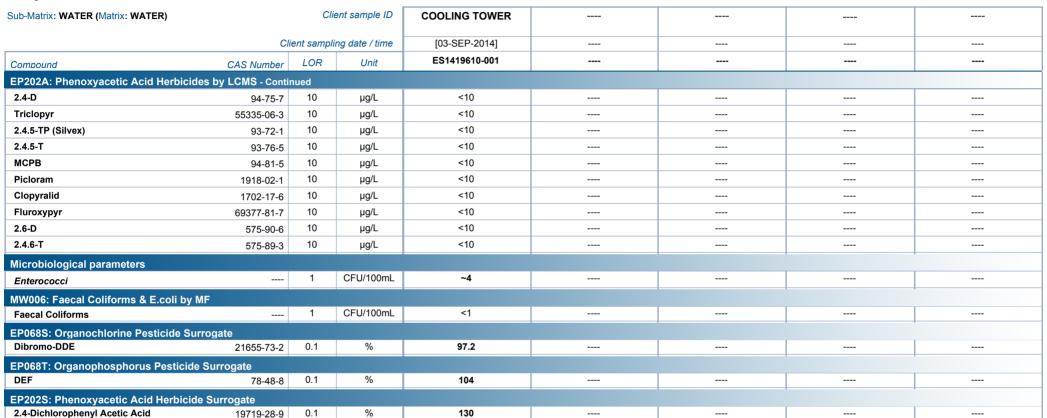




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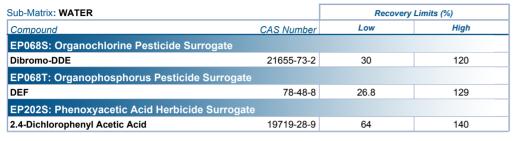


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Surrogate Control Limits







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Client MJM ENVIRONMENTAL PTY LTD Laboratory : Environmental Division Sydney

Contact : MS BRIGID KELLY Contact : Client Services

Address Address : 277-289 Woodpark Road Smithfield NSW Australia 2164 : OFFICE 1, 335 WHARF ROAD

NEWCASTLE NSW, AUSTRALIA 2300

E-mail E-mail : brigid@mjmenvironmental.com.au : sydney@alsglobal.com Telephone : +61 49264222 Telephone : +61-2-8784 8555

Facsimile : +61 02 49252570 Facsimile : +61-2-8784 8500

Project : 0341264 QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement Order number : 49264222

C-O-C number **Date Samples Received** : 11-SEP-2014

Sampler Issue Date : 18-SEP-2014 : AB

No. of samples received : 1 No. of samples analysed 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

: 1

This Certificate of Analysis contains the following information:

: ----

: SY/508/14

- General Comments
- Analytical Results

Site

release.

Surrogate Control Limits

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Client : MJM ENVIRONMENTAL PTY LTD

Project : 0341264



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

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- MW006 is ALS's internal code and is equivalent to AS4276.7.
- MW023 is ALS's internal code and is equivalent to AS4276.9.



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.

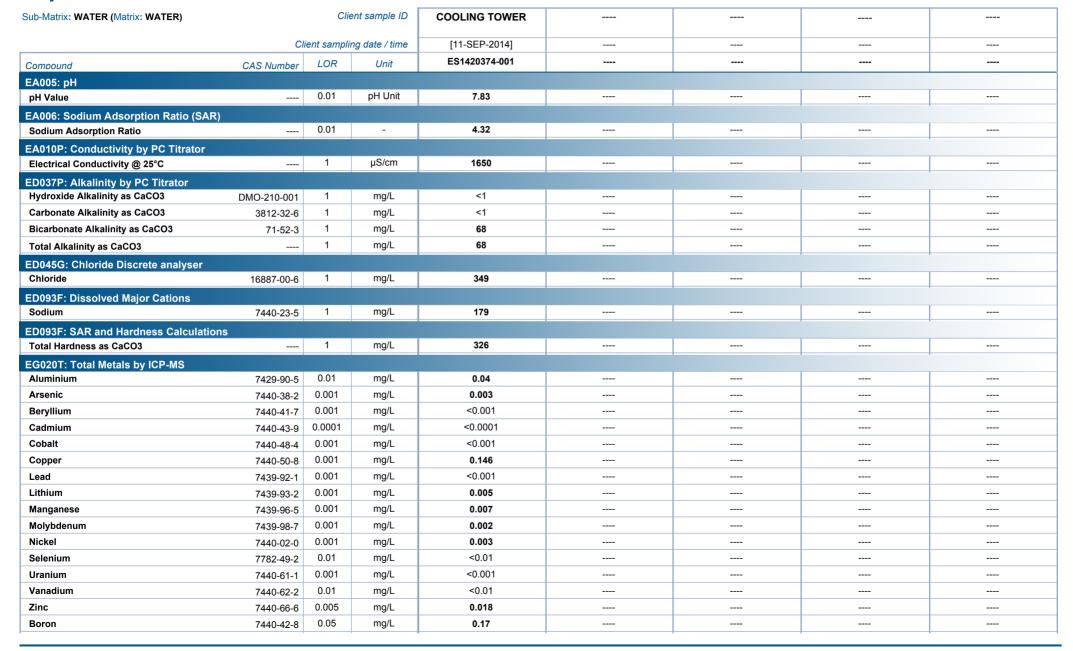
Signatories	Position	Accreditation Category
Alison Graham	Supervisor - Inorganic	Newcastle - Inorganics
Ankit Joshi	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Dian Dao	Inorganic Chemist	Sydney Inorganics
Lana Nguyen	Senior LCMS Chemist	Sydney Organics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Shobhna Chandra	Metals Coordinator	Sydney Inorganics
Tony DeSouza	Senior Microbiologist	Sydney Microbiology

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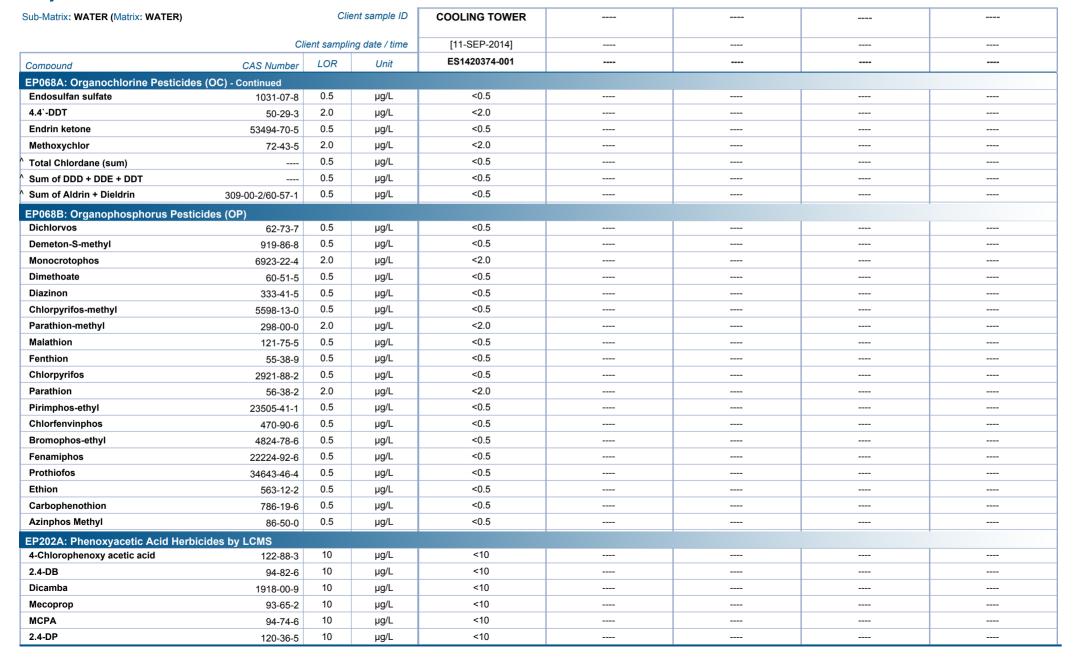




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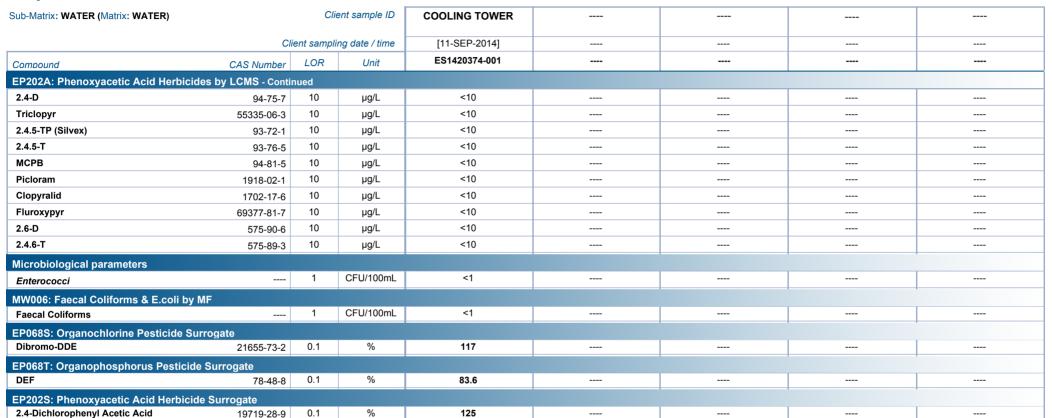


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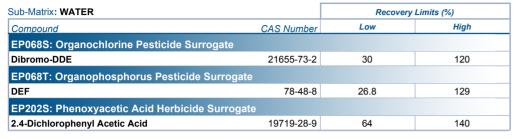


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Project : 0341264

Surrogate Control Limits





BOC Wastewater Sampling	BOC Limited Kooragang Island
Appendix B - Sampling Field Notes	



WASTE WATER SAMPLING FORM

Client Name:		BOC Lin	nited Kooragang Island						
Date	27	8	2014	Tir	me:	10:00	am		
	Day	Month	Year						
Reasons fo	or sampling		Research the possiblity of using cooling tower wastewater for irrigation						
Location of	f sampling p	oint:	Near cooling towers, close to Egret St						
Nature of sampling point			Groundwater	Tradewaste sump Surface water					
			Stormwater	X Ot	her	Please sp	ecify		
				Wastew	ater st	ored in 10.	000 L Poly Tanks		
Sample ID:			Cooling Tower						
Depth sam) m						
Sample ap			Clear						
Water Level in BH FUIL			1.2 m						
Volume of	sample take	en	1.5 (
Name of Sa									
			In-situ bailer						
Nature of sample point									
COC Refer			3270814						
Number of									
Other comr	ments:								
Som	ple -	rake	n from to	ank	Clo	sest.	to		
cooling tower									

NOTE: ONE WATER SAMPLING FORM TO BE COMPLETED FOR EACH SAMPLE POINT



WASTE WATER SAMPLING FORM

Client Name:		BOC Lir	mited Kooragang Island						
Date	3	9	2014	Time:	10:17am				
	Day	Month	Year						
Reasons	for sampling	:	Research the possiblity of using cooling tower wastewater for irrigation						
Location of	of sampling p	ooint:	Near cooling towers, close to Egret St						
Nature of sampling point			Groundwater	Tradewa	aste sump Surface water				
			Stormwater	X Other	Please specify				
				Wastewater s	stored in 10,000 L Poly Tanks				
Sample ID):		Cooling Tower						
Depth san	nple taken:		į m						
Sample ap	pearance		'lear						
Water Lev		Full	(, 2_ m						
Volume of	sample take	en j	·SL						
Name of S	Sampler		AB						
Method of sampling			In-situ bailer						
Nature of	sample poin		Storage Tank						
	rence No.		+0030914						
Number of	Bottles								
Other com	ments: R FJ	1.							
San	4018	takes	n from tank	n close	est to cooling tower				

NOTE: ONE WATER SAMPLING FORM TO BE COMPLETED FOR EACH SAMPLE POINT



WASTE WATER SAMPLING FORM

Client Name:		BOC Lir	mited Koor	agang Island					
Date	11	9	2	2014		Time:	9:500	سر	
	Day	Month		Year					
Reasons	for sampling		Research the possiblity of using cooling tower wastewater for irrigation						
Location of	of sampling p	oint:	Near cooling towers, close to Egret St						
Nature of sampling point				Groundwater		Γradewas	ste sump	Surface wa	ater
				Stormwater	X	Other	Please spe	cify	
					Waste	water sto	ored in 10,00	00 L Poly Tar	nks
Sample ID):		Cooling 7	Tower					
Depth san	nple taken:		١	m					
Sample ap	pearance		Clear	/					
Water Lev	el in BH	FUI	1.2	m					
Volume of	sample take	en	1.5 C						
Name of S	Sampler								
			In-situ ba	iler					
				Γank					
COC Reference No. AUIOCIL									
Number of	Bottles	10							
Other com	ments:								
San	ok ta	leen	Gen	n tank	- cle	sest	to C	colne	tower
								<u>J</u>	

NOTE: ONE WATER SAMPLING FORM TO BE COMPLETED FOR EACH SAMPLE POINT