

# 13

## Groundwater analysis results



## CERTIFICATE OF ANALYSIS

<i>Client</i>	: CONNELL HATCH	<i>Laboratory</i>	: Environmental Division Brisbane	<i>Page</i>	: 1 of 9
<i>Contact</i>	: MR S MURPHY	<i>Contact</i>	: Tim Kilmister	<i>Work Order</i>	: <b>EB0706857</b>
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<i>Project</i>	: HR5001	<i>Quote number</i>	: BN/262/05	<i>Date received</i>	: 21 Jun 2007
<i>Order number</i>	: - Not provided -			<i>Date issued</i>	: 3 Jul 2007
<i>C-O-C number</i>	: - Not provided -			<i>No. of samples</i>	- Received : 8
<i>Site</i>	: JILALAN				Analysed : 8

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This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatory</i>	<i>Position</i>	<i>Department</i>
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## Comments

This report for the ALSE reference EB0706857 supersedes any previous reports with this reference. Results apply to the samples as submitted. All pages of this report have been checked and approved for release.

This report contains the following information:

- 1 **Analytical Results for Samples Submitted**
- 1 **Surrogate Recovery Data**

The analytical procedures used by ALS Environmental have been developed from established internationally-recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported herein. Reference methods from which ALSE methods are based are provided in parenthesis.

When moisture determination has been performed, results are reported on a dry weight basis. When a reported 'less than' result is higher than the LOR, this may be due to primary sample extracts/digestion dilution and/or insufficient sample amount for analysis. Surrogate Recovery Limits are static and based on USEPA SW846 or ALS-QWI/EN38 (in the absence of specified USEPA limits). Where LOR of reported result differ from standard LOR, this may be due to high moisture, reduced sample amount or matrix interference. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number, LOR = Limit of Reporting. \* Indicates failed Surrogate Recoveries.

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 Client : CONNELL HATCH  
 Work Order : EB0706857



**Analytical Results**

				Client Sample ID :	81402	105763	65471	81920	20857
				Sample Matrix Type / Description :	WATER	WATER	WATER	WATER	WATER
				Sample Date / Time :	19 Jun 2007 15:00	19 Jun 2007 15:00	19 Jun 2007 15:00	20 Jun 2007 15:00	20 Jun 2007 15:00
				Laboratory Sample ID :					
Analyte	CAS number	LOR	Units	EB0706857-001	EB0706857-002	EB0706857-003	EB0706857-004	EB0706857-005	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Arsenic	7440-38-2	0.001 mg/L		0.001	<0.001	<0.001	<0.001	<0.001	
Cadmium	7440-43-9	0.0001 mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001 mg/L		<0.001	<0.001	<0.001	<0.001	<0.001	
Copper	7440-50-8	0.001 mg/L		<0.001	<0.001	0.013	<0.001	0.002	
Lead	7439-92-1	0.001 mg/L		<0.001	<0.001	<0.001	<0.001	0.001	
Nickel	7440-02-0	0.001 mg/L		<0.001	<0.001	<0.001	<0.001	<0.001	
Zinc	7440-66-6	0.005 mg/L		<0.005	0.048	0.117	<0.005	0.017	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001 mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EP066: Polychlorinated Biphenyls (PCB)</b>									
Total Polychlorinated biphenyls		1 µg/L		<1	<1	<1	<1	<1	
<b>EP068A: Organochlorine Pesticides (OC)</b>									
alpha-BHC	319-84-6	0.5 µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	
Hexachlorobenzene (HCB)	118-74-1	0.5 µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	
gamma-BHC	58-89-9	0.5 µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	
delta-BHC	319-86-8	0.5 µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	
Heptachlor	76-44-8	0.5 µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	
Aldrin	309-00-2	0.5 µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	
Heptachlor epoxide	1024-57-3	0.5 µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	
trans-Chlordane	5103-74-2	0.5 µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	
alpha-Endosulfan	959-98-8	0.5 µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	
cis-Chlordane	5103-71-9	0.5 µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	
Dieldrin	60-57-1	0.5 µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	
4,4'-DDE	72-55-9	0.5 µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	
Endrin	72-20-8	0.5 µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	
beta-Endosulfan	33213-65-9	0.5 µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	
4,4'-DDD	72-54-8	0.5 µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	
Endrin aldehyde	7421-93-4	0.5 µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	
Endosulfan sulfate	1031-07-8	0.5 µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	
4,4'-DDT	50-29-3	2 µg/L		<2	<2	<2	<2	<2	
Endrin ketone	53494-70-5	0.5 µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	
Methoxychlor	72-43-5	2 µg/L		<2	<2	<2	<2	<2	
<b>EP068B: Organophosphorus Pesticides (OP)</b>									
Dichlorvos	62-73-7	0.5 µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	
Demeton-S-methyl	919-86-8	0.5 µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	
Monocrotophos	6923-22-4	2 µg/L		<2	<2	<2	<2	<2	
Dimethoate	60-51-5	0.5 µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	

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 Client : CONNELL HATCH  
 Work Order : EB0706857



## Analytical Results

				Client Sample ID :	81402	105763	65471	81920	20857
				Sample Matrix Type / Description :	WATER	WATER	WATER	WATER	WATER
				Sample Date / Time :	19 Jun 2007 15:00	19 Jun 2007 15:00	19 Jun 2007 15:00	20 Jun 2007 15:00	20 Jun 2007 15:00
				Laboratory Sample ID :	EB0706857-001	EB0706857-002	EB0706857-003	EB0706857-004	EB0706857-005
Analyte	CAS number	LOR	Units						
<b>EP068B: Organophosphorus Pesticides (OP)</b>									
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion-methyl	298-00-0	2	µg/L	<2	<2	<2	<2	<2	<2
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion	56-38-2	2	µg/L	<2	<2	<2	<2	<2	<2
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b)fluoranthene	205-99-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a,h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g,h,i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction		20	µg/L	<20	<20	<20	<20	<20	<20
C10 - C14 Fraction		50	µg/L	<50	<50	<50	<50	<50	<50
C15 - C28 Fraction		100	µg/L	<100	<100	<100	<100	<100	<100
C29 - C36 Fraction		50	µg/L	<50	<50	<50	<50	<50	<50

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**Analytical Results**

				Client Sample ID :	81402	105763	65471	81920	20857
				Sample Matrix Type / Description :	WATER	WATER	WATER	WATER	WATER
				Sample Date / Time :	19 Jun 2007 15:00	19 Jun 2007 15:00	19 Jun 2007 15:00	20 Jun 2007 15:00	20 Jun 2007 15:00
				Laboratory Sample ID :	<b>EB0706857-001</b>	<b>EB0706857-002</b>	<b>EB0706857-003</b>	<b>EB0706857-004</b>	<b>EB0706857-005</b>
Analyte	CAS number	LOR	Units						
<b>EP080: BTEX</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	<2	<2	<2	<2
	106-42-3								
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	<2
<b>EP066S: PCB Surrogate</b>									
Decachlorobiphenyl	2051-24-3	0.1	%	82.0	90.2	76.2	58.0	63.2	
<b>EP068S: Organochlorine Pesticide Surrogate</b>									
Dibromo-DDE	21655-73-2	0.1	%	92.4	95.6	82.7	56.8	65.7	
<b>EP068T: Organophosphorus Pesticide Surrogate</b>									
DEF	78-48-8	0.1	%	119	115	105	69.7	78.7	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	0.1	%	35.9	34.2	30.1	22.2	24.2	
2-Chlorophenol-D4	93951-73-6	0.1	%	86.1	86.4	76.8	55.0	63.9	
2,4,6-Tribromophenol	118-79-6	0.1	%	93.9	99.5	84.6	62.7	73.3	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	0.1	%	89.1	87.2	81.0	61.2	66.2	
Anthracene-d10	1719-06-8	0.1	%	73.2	72.7	73.6	58.7	64.6	
4-Terphenyl-d14	1718-51-0	0.1	%	79.4	81.3	81.3	58.7	69.5	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	0.1	%	109	104	100	99.5	104	
Toluene-D8	2037-26-5	0.1	%	99.2	102	103	98.4	107	
4-Bromofluorobenzene	460-00-4	0.1	%	105	106	106	105	109	

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 Client : CONNELL HATCH  
 Work Order : EB0706857



## Analytical Results

				Client Sample ID :	20787	46025	KEAT 1		
Sample Matrix Type / Description :				WATER	WATER	WATER			
Sample Date / Time :				19 Jun 2007 15:00	19 Jun 2007 15:00	20 Jun 2007 15:00			
Laboratory Sample ID :									
Analyte	CAS number	LOR	Units	EB0706857-006	EB0706857-007	EB0706857-008			
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Arsenic	7440-38-2	0.001 mg/L		<0.001	<0.001	<0.001			
Cadmium	7440-43-9	0.0001 mg/L		<0.0001	<0.0001	<0.0001			
Chromium	7440-47-3	0.001 mg/L		<0.001	<0.001	<0.001			
Copper	7440-50-8	0.001 mg/L		<0.001	<0.001	<0.001			
Lead	7439-92-1	0.001 mg/L		<0.001	<0.001	<0.001			
Nickel	7440-02-0	0.001 mg/L		<0.001	<0.001	<0.001			
Zinc	7440-66-6	0.005 mg/L		<0.005	<0.005	<0.005			
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001 mg/L		<0.0001	<0.0001	<0.0001			
<b>EP066: Polychlorinated Biphenyls (PCB)</b>									
Total Polychlorinated biphenyls		1 µg/L		<1	<1	<1			
<b>EP068A: Organochlorine Pesticides (OC)</b>									
alpha-BHC	319-84-6	0.5 µg/L		<0.5	<0.5	<0.5			
Hexachlorobenzene (HCB)	118-74-1	0.5 µg/L		<0.5	<0.5	<0.5			
gamma-BHC	58-89-9	0.5 µg/L		<0.5	<0.5	<0.5			
delta-BHC	319-86-8	0.5 µg/L		<0.5	<0.5	<0.5			
Heptachlor	76-44-8	0.5 µg/L		<0.5	<0.5	<0.5			
Aldrin	309-00-2	0.5 µg/L		<0.5	<0.5	<0.5			
Heptachlor epoxide	1024-57-3	0.5 µg/L		<0.5	<0.5	<0.5			
trans-Chlordane	5103-74-2	0.5 µg/L		<0.5	<0.5	<0.5			
alpha-Endosulfan	959-98-8	0.5 µg/L		<0.5	<0.5	<0.5			
cis-Chlordane	5103-71-9	0.5 µg/L		<0.5	<0.5	<0.5			
Dieldrin	60-57-1	0.5 µg/L		<0.5	<0.5	<0.5			
4,4'-DDE	72-55-9	0.5 µg/L		<0.5	<0.5	<0.5			
Endrin	72-20-8	0.5 µg/L		<0.5	<0.5	<0.5			
beta-Endosulfan	33213-65-9	0.5 µg/L		<0.5	<0.5	<0.5			
4,4'-DDD	72-54-8	0.5 µg/L		<0.5	<0.5	<0.5			
Endrin aldehyde	7421-93-4	0.5 µg/L		<0.5	<0.5	<0.5			
Endosulfan sulfate	1031-07-8	0.5 µg/L		<0.5	<0.5	<0.5			
4,4'-DDT	50-29-3	2 µg/L		<2	<2	<2			
Endrin ketone	53494-70-5	0.5 µg/L		<0.5	<0.5	<0.5			
Methoxychlor	72-43-5	2 µg/L		<2	<2	<2			
<b>EP068B: Organophosphorus Pesticides (OP)</b>									
Dichlorvos	62-73-7	0.5 µg/L		<0.5	<0.5	<0.5			
Demeton-S-methyl	919-86-8	0.5 µg/L		<0.5	<0.5	<0.5			
Monocrotophos	6923-22-4	2 µg/L		<2	<2	<2			
Dimethoate	60-51-5	0.5 µg/L		<0.5	<0.5	<0.5			

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 Client : CONNELL HATCH  
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## Analytical Results

				Client Sample ID :	20787	46025	KEAT 1		
				Sample Matrix Type / Description :	WATER	WATER	WATER		
				Sample Date / Time :	19 Jun 2007 15:00	19 Jun 2007 15:00	20 Jun 2007 15:00		
				Laboratory Sample ID :					
Analyte	CAS number	LOR	Units	EB0706857-006	EB0706857-007	EB0706857-008			
<b>EP068B: Organophosphorus Pesticides (OP)</b>									
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	<0.5			
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	<0.5			
Parathion-methyl	298-00-0	2	µg/L	<2	<2	<2			
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	<0.5			
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	<0.5			
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	<0.5			
Parathion	56-38-2	2	µg/L	<2	<2	<2			
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	<0.5			
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	<0.5			
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	<0.5			
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	<0.5			
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	<0.5			
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	<0.5			
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	<0.5			
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0			
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0			
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0			
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0			
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0			
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0			
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0			
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0			
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0			
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0			
Benzo(b)fluoranthene	205-99-2	1.0	µg/L	<1.0	<1.0	<1.0			
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0			
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5			
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0			
Dibenz(a,h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0			
Benzo(g,h,i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0			
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction		20	µg/L	<20	<20	<20			
C10 - C14 Fraction		50	µg/L	<50	<50	<50			
C15 - C28 Fraction		100	µg/L	<100	100	<100			
C29 - C36 Fraction		50	µg/L	60	<50	<50			



Page Number : 8 of 9  
 Client : CONNELL HATCH  
 Work Order : EB0706857



**Analytical Results**

				Client Sample ID :	20787	46025	KEAT 1		
				Sample Matrix Type / Description :	WATER	WATER	WATER		
				Sample Date / Time :	19 Jun 2007 15:00	19 Jun 2007 15:00	20 Jun 2007 15:00		
				Laboratory Sample ID :					
Analyte	CAS number	LOR	Units	EB0706857-006	EB0706857-007	EB0706857-008			
<b>EP080: BTEX</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1			
Toluene	108-88-3	2	µg/L	<2	<2	<2			
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2			
meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	<2			
	106-42-3								
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2			
<b>EP066S: PCB Surrogate</b>									
Decachlorobiphenyl	2051-24-3	0.1	%	91.2	85.8	90.2			
<b>EP068S: Organochlorine Pesticide Surrogate</b>									
Dibromo-DDE	21655-73-2	0.1	%	91.4	77.6	81.2			
<b>EP068T: Organophosphorus Pesticide Surrogate</b>									
DEF	78-48-8	0.1	%	108	99.0	104			
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	0.1	%	30.9	26.5	30.6			
2-Chlorophenol-D4	93951-73-6	0.1	%	81.5	58.4	72.5			
2,4,6-Tribromophenol	118-79-6	0.1	%	96.7	84.7	86.6			
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	0.1	%	81.0	71.2	78.7			
Anthracene-d10	1719-06-8	0.1	%	70.9	64.6	78.4			
4-Terphenyl-d14	1718-51-0	0.1	%	78.1	70.6	84.0			
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	0.1	%	113	102	89.3			
Toluene-D8	2037-26-5	0.1	%	110	99.8	94.0			
4-Bromofluorobenzene	460-00-4	0.1	%	109	104	99.8			



## Surrogate Control Limits

Matrix Type: WATER - Surrogate Control Limits

Surrogate Control Limits

Method name	Analyte name	Lower Limit	Upper Limit
<b>EP066: Polychlorinated Biphenyls (PCB)</b>			
EP066S: PCB Surrogate	Decachlorobiphenyl	10	164
<b>EP068: Pesticides</b>			
EP068S: Organochlorine Pesticide Surrogate	Dibromo-DDE	10	136
EP068T: Organophosphorus Pesticide Surrogate	DEF	10	110
<b>EP075(SIM): PAH/Phenols (GC/MS - SIM)</b>			
EP075(SIM)S: Phenolic Compound Surrogates	Phenol-d6	10	94
	2-Chlorophenol-D4	23	134
	2,4,6-Tribromophenol	10	123
EP075(SIM)T: PAH Surrogates	2-Fluorobiphenyl	43	116
	Anthracene-d10	27	133
	4-Terphenyl-d14	33	141
<b>EP080: TPH Volatiles/BTEX</b>			
EP080S: TPH(V)/BTEX Surrogates	1,2-Dichloroethane-D4	80	120
	Toluene-D8	88	110
	4-Bromofluorobenzene	86	115



## CERTIFICATE OF ANALYSIS

<i>Client</i>	: CONNELL HATCH	<i>Laboratory</i>	: Environmental Division Brisbane	<i>Page</i>	: 1 of 5
<i>Contact</i>	: MR S MURPHY	<i>Contact</i>	: Tim Kilmister	<i>Work Order</i>	: <b>EB0707537</b>
<i>Address</i>	: LOCKED BAG 1800 SPRING HILL QLD AUSTRALIA 4004	<i>Address</i>	: 32 Shand Street Stafford QLD Australia 4053		
<i>E-mail</i>	: murphyse@conwag.com	<i>E-mail</i>	: Services.Brisbane@alsenviro.com		
<i>Telephone</i>	: 31358000	<i>Telephone</i>	: 61-7-3243 7222		
<i>Facsimile</i>	: 31358400	<i>Facsimile</i>	: 61-7-3243 7259		
<i>Project</i>	: HR5001	<i>Quote number</i>	: BN/262/05	<i>Date received</i>	: 9 Jul 2007
<i>Order number</i>	: - Not provided -			<i>Date issued</i>	: 11 Jul 2007
<i>C-O-C number</i>	: - Not provided -			<i>No. of samples</i>	- Received : 8
<i>Site</i>	: JILALAN				Analysed : 8

### ALSE - Excellence in Analytical Testing



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825

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This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatory</i>	<i>Position</i>	<i>Department</i>
Stephen Hislop	Senior Inorganic Chemist	Inorganics - NATA 825 (818 - Brisbane)

## Comments

This report for the ALSE reference EB0707537 supersedes any previous reports with this reference. Results apply to the samples as submitted. All pages of this report have been checked and approved for release.

This report contains the following information:

- 1 **Analytical Results for Samples Submitted**
- 1 **Surrogate Recovery Data**

The analytical procedures used by ALS Environmental have been developed from established internationally-recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported herein. Reference methods from which ALSE methods are based are provided in parenthesis.

When moisture determination has been performed, results are reported on a dry weight basis. When a reported 'less than' result is higher than the LOR, this may be due to primary sample extracts/digestion dilution and/or insufficient sample amount for analysis. Surrogate Recovery Limits are static and based on USEPA SW846 or ALS-QWI/EN38 (in the absence of specified USEPA limits). Where LOR of reported result differ from standard LOR, this may be due to high moisture, reduced sample amount or matrix interference. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number, LOR = Limit of Reporting. \* Indicates failed Surrogate Recoveries.

Specific comments for Work Order **EB0707537**

Ionic Balance out of acceptable limits due to analytes not quantified in this report. Results have been confirmed through reanalysis.

Page Number : 3 of 5  
 Client : CONNELL HATCH  
 Work Order : EB0707537



**Analytical Results**

				Client Sample ID : 81402	105763	65471	81920	20857
				Sample Matrix Type / Description : WATER	WATER	WATER	WATER	WATER
				Sample Date / Time : 19 Jun 2007 15:00	19 Jun 2007 15:00	19 Jun 2007 15:00	20 Jun 2007 15:00	20 Jun 2007 15:00
				Laboratory Sample ID :				
Analyte	CAS number	LOR	Units	EB0707537-001	EB0707537-002	EB0707537-003	EB0707537-004	EB0707537-005
<b>EA015: Total Dissolved Solids</b>								
Total Dissolved Solids @180°C	GIS-210-010	1	mg/L	1660	1220	152	532	324
<b>ED037P: Alkalinity by PC Titrator</b>								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	984	868	324	748	592
Total Alkalinity as CaCO3		1	mg/L	984	868	324	748	592
<b>ED040F: Dissolved Major Anions</b>								
Sulphate as SO4 2-	14808-79-8	1	mg/L	27	15	13	7	2
<b>ED045P: Chloride by PC Titrator</b>								
Chloride	16887-00-6	1	mg/L	935	600	28	69	30
<b>ED093F: Dissolved Major Cations</b>								
Calcium	7440-70-2	1	mg/L	97	143	8	92	36
Magnesium	7439-95-4	1	mg/L	101	106	8	39	19
Sodium	7440-23-5	1	mg/L	391	161	33	54	52
Potassium	7440-09-7	1	mg/L	<1	<1	2	<1	<1
<b>EK040P: Fluoride by PC Titrator</b>								
Fluoride	16984-48-8	0.1	mg/L	0.4	0.3	<0.1	0.1	0.2
<b>EK057: Nitrite as N</b>								
Nitrite as N		0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010
<b>EK058: Nitrate as N</b>								
Nitrate as N	14797-55-8	0.010	mg/L	0.085	1.32	1.08	0.282	1.75
<b>EK059: Nitrite plus Nitrate as N (NOx)</b>								
Nitrite + Nitrate as N		0.010	mg/L	0.085	1.32	1.08	0.282	1.75
<b>EK071: Reactive Phosphorus as P (Dissolved)</b>								
Reactive Phosphorus - Filtered		0.010	mg/L	0.019	0.011	<0.010	0.016	0.034
<b>EN055: Ionic Balance</b>								
Total Anions		0.01	meq/L	46.6	34.6	7.54	17.0	12.7
Total Cations		0.01	meq/L	30.2	22.8	2.48	10.2	5.65
Ionic Balance		0.01	%	21.4	20.4	50.5	25.3	38.5

Page Number : 4 of 5  
 Client : CONNELL HATCH  
 Work Order : EB0707537



**Analytical Results**

				Client Sample ID :	20787	46025	KEAT1		
Sample Matrix Type / Description :				WATER	WATER	WATER			
Sample Date / Time :				19 Jun 2007 15:00	19 Jun 2007 15:00	20 Jun 2007 15:00			
Laboratory Sample ID :									
Analyte	CAS number	LOR	Units	EB0707537-006	EB0707537-007	EB0707537-008			
<b>EA015: Total Dissolved Solids</b>									
Total Dissolved Solids @180°C	GIS-210-010	1	mg/L	176	908	844			
<b>ED037P: Alkalinity by PC Titrator</b>									
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	249	667	912			
Total Alkalinity as CaCO3		1	mg/L	249	667	912			
<b>ED040F: Dissolved Major Anions</b>									
Sulphate as SO4 2-	14808-79-8	1	mg/L	15	10	13			
<b>ED045P: Chloride by PC Titrator</b>									
Chloride	16887-00-6	1	mg/L	36	232	186			
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	7	106	96			
Magnesium	7439-95-4	1	mg/L	7	74	78			
Sodium	7440-23-5	1	mg/L	37	142	132			
Potassium	7440-09-7	1	mg/L	<1	<1	<1			
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	<0.1	0.3	0.4			
<b>EK057: Nitrite as N</b>									
Nitrite as N		0.010	mg/L	<0.010	<0.010	<0.010			
<b>EK058: Nitrate as N</b>									
Nitrate as N	14797-55-8	0.010	mg/L	4.58	16.2	3.71			
<b>EK059: Nitrite plus Nitrate as N (NOx)</b>									
Nitrite + Nitrate as N		0.010	mg/L	4.58	16.2	3.71			
<b>EK071: Reactive Phosphorus as P (Dissolved)</b>									
Reactive Phosphorus - Filtered		0.010	mg/L	<0.010	0.016	0.018			
<b>EN055: Ionic Balance</b>									
Total Anions		0.01	meq/L	6.30	20.1	23.7			
Total Cations		0.01	meq/L	2.57	17.5	16.9			
Ionic Balance		0.01	%	42.1	6.72	16.7			

## Surrogate Control Limits

- 1 No surrogates present on this report.



## QUALITY CONTROL REPORT

<b>Client</b> :	<b>CONNELL HATCH</b>	<b>Laboratory</b> :	Environmental Division Brisbane	<b>Page</b> :	1 of 13
<b>Contact</b> :	MR S MURPHY	<b>Contact</b> :	Tim Kilmister	<b>Work order</b> :	<b>EB0706857</b>
<b>Address</b> :	LOCKED BAG 1800 SPRING HILL QLD AUSTRALIA 4004	<b>Address</b> :	32 Shand Street Stafford QLD Australia 4053	<b>Amendment No.</b> :	
<b>Project</b> :	HR5001	<b>Quote number</b> :	BN/262/05	<b>Date received</b> :	21 Jun 2007
<b>Order number</b> :	- Not provided -			<b>Date issued</b> :	3 Jul 2007
<b>C-O-C number</b> :	- Not provided -				
<b>Site</b> :	JILALAN				
<b>E-mail</b> :	murphyse@conwag.com	<b>E-mail</b> :	Services.Brisbane@alsenviro.com	<b>No. of samples</b>	
<b>Telephone</b> :	31358000	<b>Telephone</b> :	61-7-3243 7222	<b>Received</b> :	8
<b>Facsimile</b> :	31358400	<b>Facsimile</b> :	61-7-3243 7259	<b>Analysed</b> :	8

This final report for the ALSE work order reference EB0706857 supersedes any previous reports with this reference.

Results apply to the samples as submitted. All pages of this report have been checked and approved for release.

This report contains the following information:

- 1 Laboratory Duplicates (DUP); Relative Percentage Difference (RPD) and Acceptance Limits
- 1 Method Blank (MB) and Laboratory Control Samples (LCS); Recovery and Acceptance Limits
- 1 Matrix Spikes (MS); Recovery and Acceptance Limits

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This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

#### Signatory

Carsten Emrich  
Kim McCabe  
Phillip Kennedy

#### Department

Organics - NATA 825 (818 - Brisbane)  
Inorganics - NATA 825 (818 - Brisbane)  
Inorganics - NATA 825 (818 - Brisbane)





Client : CONNELL HATCH  
 Project : HR5001

Work Order : EB0706857  
 ALS Quote Reference : BN/262/05

Page Number : 2 of 13  
 Issue Date : 3 Jul 2007

## Quality Control Report - Laboratory Duplicates (DUP)

The quality control term **Laboratory Duplicate** refers to an intralaboratory split sample randomly selected from the sample batch. Laboratory duplicates provide information on method precision and sample heterogeneity.  
 - Anonymous - Client Sample IDs refer to samples which are not specifically part of this work order but formed part of the QC process lot. *Abbreviations: LOR = Limit of Reporting, RPD = Relative Percent Difference.*  
 \* Indicates failed QC. The permitted ranges for the RPD of Laboratory Duplicates (relative percent deviation) are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting:- Result < 10 times LOR, no limit - Result between 10 and 20 times LOR, 0% - 50% - Result > 20 times LOR, 0% - 20%

Matrix Type: WATER

Laboratory Duplicates (DUP) Report

Laboratory Sample ID	Client Sample ID	Analyte name	LOR	Original Result	Duplicate Result	RPD
<b>EG020F: Dissolved Metals by ICP-MS</b>						
<b>EG020F: Dissolved Metals by ICP-MS - ( QC Lot: 436471 )</b>				<b>mg/L</b>	<b>mg/L</b>	<b>%</b>
EB0706836-001	Anonymous	Arsenic	0.001 mg/L	0.001	0.002	0.0
		Cadmium	0.0001 mg/L	<0.0001	<0.0001	0.0
		Chromium	0.001 mg/L	<0.001	<0.001	0.0
		Copper	0.001 mg/L	0.007	0.007	0.0
		Lead	0.001 mg/L	<0.001	<0.001	0.0
		Nickel	0.001 mg/L	0.001	<0.001	0.0
		Zinc	0.005 mg/L	<0.005	<0.005	0.0
EB0706846-001	Anonymous	Arsenic	0.001 mg/L	0.001	<0.001	0.0
		Cadmium	0.0001 mg/L	<0.0001	<0.0001	0.0
		Chromium	0.001 mg/L	<0.001	<0.001	0.0
		Copper	0.001 mg/L	0.001	0.001	0.0
		Lead	0.001 mg/L	<0.001	<0.001	0.0
		Nickel	0.001 mg/L	0.001	0.004	90.8
		Zinc	0.005 mg/L	<0.005	<0.005	0.0
<b>EG020F: Dissolved Metals by ICP-MS - ( QC Lot: 436473 )</b>				<b>mg/L</b>	<b>mg/L</b>	<b>%</b>
EB0706846-013	Anonymous	Arsenic	0.001 mg/L	<0.001	<0.001	0.0
		Cadmium	0.0001 mg/L	<0.0001	<0.0001	0.0
		Chromium	0.001 mg/L	<0.001	<0.001	0.0
		Copper	0.001 mg/L	<0.001	<0.001	0.0
		Lead	0.001 mg/L	<0.001	<0.001	0.0
		Nickel	0.001 mg/L	<0.001	0.001	0.0
		Zinc	0.005 mg/L	<0.005	<0.005	0.0
EB0706863-003	Anonymous	Arsenic	0.001 mg/L	<0.001	<0.001	0.0
		Cadmium	0.0001 mg/L	<0.0001	<0.0001	0.0
		Chromium	0.001 mg/L	<0.001	<0.001	0.0

Client : CONNELL HATCH  
 Project : HR5001

Work Order : EB0706857  
 ALS Quote Reference : BN/262/05

Page Number : 3 of 13  
 Issue Date : 3 Jul 2007



Matrix Type: WATER

Laboratory Duplicates (DUP) Report

Laboratory Sample ID	Client Sample ID	Analyte name	LOR	Original Result	Duplicate Result	RPD
<b>EG020F: Dissolved Metals by ICP-MS - continued</b>						
<b>EG020F: Dissolved Metals by ICP-MS - ( QC Lot: 436473 ) - continued</b>				mg/L	mg/L	%
EB0706863-003	Anonymous	Copper	0.001 mg/L	0.010	0.010	0.0
		Lead	0.001 mg/L	<0.001	<0.001	0.0
		Nickel	0.001 mg/L	<0.001	<0.001	0.0
		Zinc	0.005 mg/L	0.010	0.009	0.0
<b>EG020F: Dissolved Metals by ICP-MS - ( QC Lot: 440462 )</b>				mg/L	mg/L	%
EB0707098-012	Anonymous	Arsenic	0.001 mg/L	<0.001	<0.001	0.0
		Cadmium	0.0001 mg/L	<0.0001	0.0001	0.0
		Chromium	0.001 mg/L	<0.001	<0.001	0.0
		Copper	0.001 mg/L	0.002	0.002	0.0
		Lead	0.001 mg/L	<0.001	<0.001	0.0
		Nickel	0.001 mg/L	0.005	0.005	0.0
		Zinc	0.005 mg/L	<0.005	<0.005	0.0
<b>EG035F: Dissolved Mercury by FIMS</b>						
<b>EG035F: Dissolved Mercury by FIMS - ( QC Lot: 439316 )</b>				mg/L	mg/L	%
EB0706836-001	Anonymous	Mercury	0.0001 mg/L	<0.0001	<0.0001	0.0
EB0706846-008	Anonymous	Mercury	0.0001 mg/L	0.0001	0.0001	0.0
<b>EG035F: Dissolved Mercury by FIMS - ( QC Lot: 439317 )</b>				mg/L	mg/L	%
EB0706857-006	20787	Mercury	0.0001 mg/L	<0.0001	<0.0001	0.0
<b>EP080/071: Total Petroleum Hydrocarbons</b>						
<b>EP080/071: Total Petroleum Hydrocarbons - ( QC Lot: 437061 )</b>				µg/L	µg/L	%
EB0706836-001	Anonymous	C6 - C9 Fraction	20 µg/L	<20	<20	0.0
EB0706857-008	KEAT 1	C6 - C9 Fraction	20 µg/L	<20	<20	0.0
<b>EP080: BTEX</b>						
<b>EP080: BTEX - ( QC Lot: 437061 )</b>				µg/L	µg/L	%
EB0706836-001	Anonymous	Benzene	1 µg/L	<1	<1	0.0
		Toluene	2 µg/L	<2	<2	0.0
		Ethylbenzene	2 µg/L	<2	<2	0.0
		meta- & para-Xylene	2 µg/L	<2	<2	0.0
		ortho-Xylene	2 µg/L	<2	<2	0.0



Client : CONNELL HATCH  
Project : HR5001

Work Order : EB0706857  
ALS Quote Reference : BN/262/05

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Issue Date : 3 Jul 2007

Matrix Type: WATER

Laboratory Duplicates (DUP) Report

Laboratory Sample ID	Client Sample ID	Analyte name	LOR	Original Result	Duplicate Result	RPD
<b>EP080: BTEX - continued</b>						
<b>EP080: BTEX - ( QC Lot: 437061 ) - continued</b>				<b>µg/L</b>	<b>µg/L</b>	<b>%</b>
EB0706857-008	KEAT 1	Benzene	1 µg/L	<1	<1	0.0
		Toluene	2 µg/L	<2	<2	0.0
		Ethylbenzene	2 µg/L	<2	<2	0.0
		meta- & para-Xylene	2 µg/L	<2	<2	0.0
		ortho-Xylene	2 µg/L	<2	<2	0.0



Client : CONNELL HATCH  
 Project : HR5001

Work Order : EB0706857  
 ALS Quote Reference : BN/262/05

Page Number : 5 of 13  
 Issue Date : 3 Jul 2007

## Quality Control Report - Method Blank (MB) and Laboratory Control Samples (LCS)

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC type is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a known, interference free matrix spiked with target analytes or certified reference material. The purpose of this QC type is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of actual laboratory data. Flagged outliers on control limits for inorganics tests may be within the NEPM specified data quality objective of recoveries in the range of 70 to 130%. Where this occurs, no corrective action is taken. Abbreviations: LOR = Limit of reporting.

Matrix Type: WATER

### Method Blank (MB) and Laboratory Control Samples (LCS) Report

Analyte name	LOR	Method blank result	Actual Results		Recovery Limits	
			Spike concentration	Spike Recovery	Dynamic Recovery Limits	
					LCS	Low
<b>EG020F: Dissolved Metals by ICP-MS</b>						
<b>EG020F: Dissolved Metals by ICP-MS - ( QC Lot: 436471 )</b>		mg/L	mg/L	%	%	%
Arsenic	0.001 mg/L	<0.001	----	----	----	----
	0.001 mg/L	----	0.1000	86.1	72.6	121
Cadmium	0.0001 mg/L	<0.0001	----	----	----	----
	0.0001 mg/L	----	0.1000	96.2	85	110
Chromium	0.001 mg/L	<0.001	----	----	----	----
	0.001 mg/L	----	0.1000	89.7	81.8	128
Copper	0.001 mg/L	<0.001	----	----	----	----
	0.001 mg/L	----	0.200	93.9	85.2	117
Lead	0.001 mg/L	<0.001	----	----	----	----
	0.001 mg/L	----	0.1000	92.0	86.7	112
Nickel	0.001 mg/L	----	0.1000	94.4	84.4	116
	0.001 mg/L	<0.001	----	----	----	----
Zinc	0.005 mg/L	<0.005	----	----	----	----
	0.005 mg/L	----	0.200	95.6	81.3	130
<b>EG020F: Dissolved Metals by ICP-MS - ( QC Lot: 436473 )</b>		mg/L	mg/L	%	%	%
Arsenic	0.001 mg/L	<0.001	----	----	----	----
	0.001 mg/L	----	0.1000	85.2	72.6	121
Cadmium	0.0001 mg/L	<0.0001	----	----	----	----
	0.0001 mg/L	----	0.1000	92.3	85	110
Chromium	0.001 mg/L	----	0.1000	91.7	81.8	128
	0.001 mg/L	<0.001	----	----	----	----
Copper	0.001 mg/L	<0.001	----	----	----	----
	0.001 mg/L	----	0.200	91.3	85.2	117
Lead	0.001 mg/L	<0.001	----	----	----	----
	0.001 mg/L	----	0.1000	91.0	86.7	112

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Matrix Type: WATER

Method Blank (MB) and Laboratory Control Samples (LCS) Report

Analyte name	LOR	Method blank result	Actual Results		Recovery Limits	
			Spike concentration	Spike Recovery	Dynamic Recovery Limits	
					LCS	Low
<b>EG020F: Dissolved Metals by ICP-MS - continued</b>						
<b>EG020F: Dissolved Metals by ICP-MS - ( QC Lot: 436473 ) - continued</b>		mg/L	mg/L	%	%	%
Nickel	0.001 mg/L	<0.001	----	----	----	----
	0.001 mg/L	----	0.1000	90.6	84.4	116
Zinc	0.005 mg/L	<0.005	----	----	----	----
	0.005 mg/L	----	0.200	91.9	81.3	130
<b>EG020F: Dissolved Metals by ICP-MS - ( QC Lot: 440462 )</b>		mg/L	mg/L	%	%	%
Arsenic	0.001 mg/L	----	0.1000	98.9	72.6	121
	0.001 mg/L	<0.001	----	----	----	----
Cadmium	0.0001 mg/L	----	0.1000	101	85	110
	0.0001 mg/L	<0.0001	----	----	----	----
Chromium	0.001 mg/L	<0.001	----	----	----	----
	0.001 mg/L	----	0.1000	104	81.8	128
Copper	0.001 mg/L	<0.001	----	----	----	----
	0.001 mg/L	----	0.200	102	85.2	117
Lead	0.001 mg/L	----	0.1000	98.2	86.7	112
	0.001 mg/L	<0.001	----	----	----	----
Nickel	0.001 mg/L	----	0.1000	98.1	84.4	116
	0.001 mg/L	<0.001	----	----	----	----
Zinc	0.005 mg/L	----	0.200	112	81.3	130
	0.005 mg/L	<0.005	----	----	----	----
<b>EG035F: Dissolved Mercury by FIMS</b>						
<b>EG035F: Dissolved Mercury by FIMS - ( QC Lot: 439316 )</b>		mg/L	mg/L	%	%	%
Mercury	0.0001 mg/L	<0.0001	----	----	----	----
	0.0001 mg/L	----	0.010	104	70	130
<b>EG035F: Dissolved Mercury by FIMS - ( QC Lot: 439317 )</b>		mg/L	mg/L	%	%	%
Mercury	0.0001 mg/L	<0.0001	----	----	----	----
	0.0001 mg/L	----	0.010	103	70	130
<b>EP066: Polychlorinated Biphenyls (PCB)</b>						
<b>EP066: Polychlorinated Biphenyls (PCB) - ( QC Lot: 436780 )</b>		µg/L	µg/L	%	%	%

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Method Blank (MB) and Laboratory Control Samples (LCS) Report

Analyte name	LOR	Method blank result	Actual Results		Recovery Limits	
			Spike concentration	Spike Recovery	Dynamic Recovery Limits	
					LCS	Low
<b>EP066: Polychlorinated Biphenyls (PCB) - continued</b>						
<b>EP066: Polychlorinated Biphenyls (PCB) - ( QC Lot: 436780 ) - continued</b>		µg/L	µg/L	%	%	%
Total Polychlorinated biphenyls	1 µg/L	----	10	86.5	43	114
	1 µg/L	<1	----	----	----	----
<b>EP068A: Organochlorine Pesticides (OC)</b>						
<b>EP068A: Organochlorine Pesticides (OC) - ( QC Lot: 436779 )</b>		µg/L	µg/L	%	%	%
4,4'-DDD	0.5 µg/L	<0.5	----	----	----	----
	0.5 µg/L	----	5	96.8	55	132
4,4'-DDE	0.5 µg/L	<0.5	----	----	----	----
	0.5 µg/L	----	5	95.0	56	130
4,4'-DDT	2 µg/L	<2	----	----	----	----
	2.0 µg/L	----	5	85.7	40	130
Aldrin	0.5 µg/L	<0.5	----	----	----	----
	0.5 µg/L	----	5	96.6	57	125
alpha-BHC	0.5 µg/L	<0.5	----	----	----	----
	0.5 µg/L	----	5	93.4	58	129
alpha-Endosulfan	0.5 µg/L	----	5	97.1	57	129
	0.5 µg/L	<0.5	----	----	----	----
beta-Endosulfan	0.5 µg/L	----	5	98.9	56	131
	0.5 µg/L	<0.5	----	----	----	----
cis-Chlordane	0.5 µg/L	<0.5	----	----	----	----
	0.5 µg/L	----	5	99.2	57	128
delta-BHC	0.5 µg/L	<0.5	----	----	----	----
	0.5 µg/L	----	5	95.9	52	133
Dieldrin	0.5 µg/L	----	5	95.0	56	131
	0.5 µg/L	<0.5	----	----	----	----
Endosulfan sulfate	0.5 µg/L	----	5	97.8	50	134
	0.5 µg/L	<0.5	----	----	----	----
Endrin	0.5 µg/L	----	5	96.2	51	134
	0.5 µg/L	<0.5	----	----	----	----
Endrin aldehyde	0.5 µg/L	----	5	99.8	53	134
	0.5 µg/L	<0.5	----	----	----	----

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Method Blank (MB) and Laboratory Control Samples (LCS) Report

Analyte name	LOR	Method blank result	Actual Results		Recovery Limits	
			Spike concentration	Spike Recovery	Dynamic Recovery Limits	
					LCS	Low
<b>EP068A: Organochlorine Pesticides (OC) - continued</b>						
<b>EP068A: Organochlorine Pesticides (OC) - ( QC Lot: 436779 ) - continued</b>		µg/L	µg/L	%	%	%
Endrin ketone	0.5 µg/L	<0.5	----	----	----	----
	0.5 µg/L	----	5	95.8	44	143
gamma-BHC	0.5 µg/L	<0.5	----	----	----	----
	0.5 µg/L	----	5	94.1	56	130
Heptachlor	0.5 µg/L	<0.5	----	----	----	----
	0.5 µg/L	----	5	94.4	49	131
Heptachlor epoxide	0.5 µg/L	----	5	97.6	56	129
	0.5 µg/L	<0.5	----	----	----	----
Hexachlorobenzene (HCB)	0.5 µg/L	<0.5	----	----	----	----
	0.5 µg/L	----	5	88.0	51	135
Methoxychlor	2 µg/L	<2	----	----	----	----
	2.0 µg/L	----	5	95.0	40	130
trans-Chlordane	0.5 µg/L	----	5	97.0	54	131
	0.5 µg/L	<0.5	----	----	----	----
<b>EP068B: Organophosphorus Pesticides (OP)</b>						
<b>EP068B: Organophosphorus Pesticides (OP) - ( QC Lot: 436779 )</b>		µg/L	µg/L	%	%	%
Methyl Azinphos	0.5 µg/L	<0.5	----	----	----	----
	0.5 µg/L	----	5	117	34	130
Bromophos-ethyl	0.5 µg/L	----	5	95.6	54	132
	0.5 µg/L	<0.5	----	----	----	----
Carbophenothion	0.5 µg/L	<0.5	----	----	----	----
	0.5 µg/L	----	5	95.8	54	132
Chlorpyrifos	0.5 µg/L	<0.5	----	----	----	----
	0.5 µg/L	----	5	95.6	51	138
Chlorpyrifos-methyl	0.5 µg/L	----	5	93.2	56	129
	0.5 µg/L	<0.5	----	----	----	----
Demeton-S-methyl	0.5 µg/L	<0.5	----	----	----	----
	0.5 µg/L	----	5	97.0	40	130
Diazinon	0.5 µg/L	<0.5	----	----	----	----
	0.5 µg/L	----	5	93.6	48	139

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Method Blank (MB) and Laboratory Control Samples (LCS) Report

Analyte name	LOR	Method blank result	Actual Results		Recovery Limits	
			Spike concentration	Spike Recovery	Dynamic Recovery Limits	
				LCS	Low	High
<b>EP068B: Organophosphorus Pesticides (OP) - continued</b>						
<b>EP068B: Organophosphorus Pesticides (OP) - ( QC Lot: 436779 ) - continued</b>						
		µg/L	µg/L	%	%	%
Dichlorvos	0.5 µg/L	----	5	98.4	47	133
	0.5 µg/L	<0.5	----	----	----	----
Dimethoate	0.5 µg/L	<0.5	----	----	----	----
	0.5 µg/L	----	5	87.3	48	132
Ethion	0.5 µg/L	<0.5	----	----	----	----
	0.5 µg/L	----	5	96.9	41	130
Fenamiphos	0.5 µg/L	----	5	92.2	39	143
	0.5 µg/L	<0.5	----	----	----	----
Fenthion	0.5 µg/L	<0.5	----	----	----	----
	0.5 µg/L	----	5	95.0	50	129
Malathion	0.5 µg/L	----	5	97.8	54	133
	0.5 µg/L	<0.5	----	----	----	----
Monocrotophos	2 µg/L	<2	----	----	----	----
	2.0 µg/L	----	5	15.5	10	100
Parathion	2.0 µg/L	----	5	100	45	142
	2 µg/L	<2	----	----	----	----
Parathion-methyl	2.0 µg/L	----	5	96.3	48	138
	2 µg/L	<2	----	----	----	----
Pirimphos-ethyl	0.5 µg/L	<0.5	----	----	----	----
	0.5 µg/L	----	5	98.4	44	132
Prothiofos	0.5 µg/L	<0.5	----	----	----	----
	0.5 µg/L	----	5	98.7	47	138
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>						
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - ( QC Lot: 436782 )</b>						
		µg/L	µg/L	%	%	%
Acenaphthene	1 µg/L	----	5	89.9	50	110
	1.0 µg/L	<1.0	----	----	----	----
Acenaphthylene	1 µg/L	----	5	94.0	51	113
	1.0 µg/L	<1.0	----	----	----	----
Anthracene	1 µg/L	----	5	79.4	46	112
	1.0 µg/L	<1.0	----	----	----	----



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Matrix Type: WATER

Method Blank (MB) and Laboratory Control Samples (LCS) Report

Analyte name	LOR	Method blank result	Actual Results		Recovery Limits	
			Spike concentration	Spike Recovery	Dynamic Recovery Limits	
				LCS	Low	High
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - continued</b>						
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - ( QC Lot: 436782 ) - continued</b>			µg/L	µg/L	%	%
Benz(a)anthracene	1 µg/L	----	5	85.1	53	115
	1.0 µg/L	<1.0	----	----	----	----
Benzo(a)pyrene	0.5 µg/L	----	5	101	49	116
	0.5 µg/L	<0.5	----	----	----	----
Benzo(b)fluoranthene	1 µg/L	----	5	98.9	48	127
	1.0 µg/L	<1.0	----	----	----	----
Benzo(g,h,i)perylene	1 µg/L	----	5	101	41	130
	1.0 µg/L	<1.0	----	----	----	----
Benzo(k)fluoranthene	1.0 µg/L	<1.0	----	----	----	----
	1 µg/L	----	5	108	46	121
Chrysene	1.0 µg/L	<1.0	----	----	----	----
	1 µg/L	----	5	93.8	50	114
Dibenz(a,h)anthracene	1.0 µg/L	<1.0	----	----	----	----
	1 µg/L	----	5	100	32	130
Fluoranthene	1 µg/L	----	5	88.8	53	112
	1.0 µg/L	<1.0	----	----	----	----
Fluorene	1 µg/L	----	5	90.4	55	113
	1.0 µg/L	<1.0	----	----	----	----
Indeno(1,2,3,cd)pyrene	1.0 µg/L	<1.0	----	----	----	----
	1 µg/L	----	5	93.3	44	130
Naphthalene	1 µg/L	----	5	90.8	48	106
	1.0 µg/L	<1.0	----	----	----	----
Phenanthrene	1 µg/L	----	5	87.1	54	110
	1.0 µg/L	<1.0	----	----	----	----
Pyrene	1 µg/L	----	5	85.5	52	112
	1.0 µg/L	<1.0	----	----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>						
<b>EP080/071: Total Petroleum Hydrocarbons - ( QC Lot: 436781 )</b>			µg/L	µg/L	%	%
C10 - C14 Fraction	50 µg/L	----	600	85.8	49	133
	50 µg/L	<50		----		

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Matrix Type: WATER

Method Blank (MB) and Laboratory Control Samples (LCS) Report

Analyte name	LOR	Method blank result	Actual Results		Recovery Limits	
			Spike concentration	Spike Recovery	Dynamic Recovery Limits	
				LCS	Low	High
<b>EP080/071: Total Petroleum Hydrocarbons - continued</b>						
<b>EP080/071: Total Petroleum Hydrocarbons - ( QC Lot: 436781 ) - continued</b>		µg/L	µg/L	%	%	%
C15 - C28 Fraction	100 µg/L	----	1020	97.2	58	130
	100 µg/L	<100		----	----	----
C29 - C36 Fraction	50 µg/L	<50		----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons - ( QC Lot: 437061 )</b>		µg/L	µg/L	%	%	%
C6 - C9 Fraction	20 µg/L	<20	----	----	----	----
	20 µg/L	----	260	92.8	73	131
<b>EP080: BTEX</b>						
<b>EP080: BTEX - ( QC Lot: 437061 )</b>		µg/L	µg/L	%	%	%
Benzene	1 µg/L	<1	----	----	----	----
	1 µg/L	----	10	85.8	73	129
Ethylbenzene	2 µg/L	<2	----	----	----	----
	2 µg/L	----	10	91.2	74	126
meta- & para-Xylene	2 µg/L	<2	----	----	----	----
	2 µg/L	----	10	90.7	71	129
ortho-Xylene	2 µg/L	----	10	90.3	75	127
	2 µg/L	<2	----	----	----	----
Toluene	2 µg/L	<2	----	----	----	----
	2 µg/L	----	10	91.9	75	127

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## Quality Control Report - Matrix Spikes (MS)

The quality control term **Matrix Spike (MS)** refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC type is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQO's). 'Ideal' recovery ranges stated may be waived in the event of sample matrix interferences. - Anonymous - Client Sample IDs refer to samples which are not specifically part of this work order but formed part of the QC process lot. *Abbreviations: LOR = Limit of Reporting, RPD = Relative Percent Difference.*

\* Indicates failed QC

Matrix Type: WATER

Matrix Spike (MS) Report

Analyte name	Laboratory Sample ID	Client Sample ID	LOR	Spike Concentration	Actual Results		Recovery Limits	
					Sample Result	Spike Recovery	Static Limits	
						MS	Low	High
<b>EG020F: Dissolved Metals by ICP-MS</b>								
<b>EG020F: Dissolved Metals by ICP-MS - ( QC Lot: 436471 )</b>				mg/L	mg/L	%	%	%
Arsenic	EB0706836-002	Anonymous	0.001 mg/L	0.100	<0.001	97.3	70	130
Cadmium			0.0001 mg/L	0.100	<0.0001	90.2	70	130
Chromium			0.001 mg/L	0.100	0.001	93.0	70	130
Copper			0.001 mg/L	0.100	0.002	91.3	70	130
Lead			0.001 mg/L	0.100	<0.001	81.4	70	130
Nickel			0.001 mg/L	0.100	0.004	92.1	70	130
Zinc			0.005 mg/L	0.100	0.006	92.0	70	130
<b>EG020F: Dissolved Metals by ICP-MS - ( QC Lot: 436473 )</b>				mg/L	mg/L	%	%	%
Arsenic	EB0706857-003	65471	0.001 mg/L	0.100	<0.001	91.2	70	130
Cadmium			0.0001 mg/L	0.100	<0.0001	97.1	70	130
Chromium			0.001 mg/L	0.100	<0.001	86.1	70	130
Copper			0.001 mg/L	0.100	0.013	95.3	70	130
Lead			0.001 mg/L	0.100	<0.001	94.9	70	130
Nickel			0.001 mg/L	0.100	<0.001	93.8	70	130
<b>EG020F: Dissolved Metals by ICP-MS - ( QC Lot: 440462 )</b>				mg/L	mg/L	%	%	%
Arsenic	EB0706857-003	65471	0.001 mg/L	0.100	<0.001	94.3	70	130
Cadmium			0.0001 mg/L	0.100	<0.0001	104	70	130
Chromium			0.001 mg/L	0.100	<0.001	106	70	130
Copper			0.001 mg/L	0.100	0.013	104	70	130
Lead			0.001 mg/L	0.100	<0.001	103	70	130
Nickel			0.001 mg/L	0.100	<0.001	96.1	70	130
<b>EG035F: Dissolved Mercury by FIMS</b>								
<b>EG035F: Dissolved Mercury by FIMS - ( QC Lot: 439316 )</b>				mg/L	mg/L	%	%	%
Mercury	EB0706836-001	Anonymous	0.0001 mg/L	0.01	<0.0001	104	70	130



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Matrix Type: WATER

Matrix Spike (MS) Report

Analyte name	Laboratory Sample ID	Client Sample ID	LOR	Spike Concentration	Actual Results		Recovery Limits	
					Sample Result	Spike Recovery	Static Limits	
						MS	Low	High
<b>EG035F: Dissolved Mercury by FIMS - continued</b>								
<b>EG035F: Dissolved Mercury by FIMS - ( QC Lot: 439317 )</b>				mg/L	mg/L	%	%	%
Mercury	EB0706857-006	20787	0.0001 mg/L	0.01	<0.0001	100	70	130
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
<b>EP080/071: Total Petroleum Hydrocarbons - ( QC Lot: 437061 )</b>				µg/L	µg/L	%	%	%
C6 - C9 Fraction	EB0706836-002	Anonymous	20 µg/L	140	<20	80.7	70	130
<b>EP080: BTEX</b>								
<b>EP080: BTEX - ( QC Lot: 437061 )</b>				µg/L	µg/L	%	%	%
Benzene	EB0706836-002	Anonymous	1 µg/L	10	<1	102	70	130
Toluene			2 µg/L	10	<2	91.8	70	130



## QUALITY CONTROL REPORT

<b>Client</b> :	<b>CONNELL HATCH</b>	<b>Laboratory</b> :	Environmental Division Brisbane	<b>Page</b> :	1 of 6
<b>Contact</b> :	MR S MURPHY	<b>Contact</b> :	Tim Kilmister	<b>Work order</b> :	<b>EB0707537</b>
<b>Address</b> :	LOCKED BAG 1800 SPRING HILL QLD AUSTRALIA 4004	<b>Address</b> :	32 Shand Street Stafford QLD Australia 4053	<b>Amendment No.</b> :	
<b>Project</b> :	HR5001	<b>Quote number</b> :	BN/262/05	<b>Date received</b> :	9 Jul 2007
<b>Order number</b> :	- Not provided -			<b>Date issued</b> :	11 Jul 2007
<b>C-O-C number</b> :	- Not provided -				
<b>Site</b> :	JILALAN				
<b>E-mail</b> :	murphyse@conwag.com	<b>E-mail</b> :	Services.Brisbane@alsenviro.com	<b>No. of samples</b>	
<b>Telephone</b> :	31358000	<b>Telephone</b> :	61-7-3243 7222	<b>Received</b> :	8
<b>Facsimile</b> :	31358400	<b>Facsimile</b> :	61-7-3243 7259	<b>Analysed</b> :	8

This final report for the ALSE work order reference EB0707537 supersedes any previous reports with this reference.

Results apply to the samples as submitted. All pages of this report have been checked and approved for release.

This report contains the following information:

- 1 Laboratory Duplicates (DUP); Relative Percentage Difference (RPD) and Acceptance Limits
- 1 Method Blank (MB) and Laboratory Control Samples (LCS); Recovery and Acceptance Limits
- 1 Matrix Spikes (MS); Recovery and Acceptance Limits

### Work order specific comments

Ionic Balance out of acceptable limits due to analytes not quantified in this report. Results have been confirmed through reanalysis.

### ALSE - Excellence in Analytical Testing



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This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

#### Signatory

Stephen Hislop

#### Department

Inorganics - NATA 825 (818 - Brisbane)

Client : CONNELL HATCH  
 Project : HR5001

Work Order : EB0707537  
 ALS Quote Reference : BN/262/05

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## Quality Control Report - Laboratory Duplicates (DUP)

The quality control term **Laboratory Duplicate** refers to an intralaboratory split sample randomly selected from the sample batch. Laboratory duplicates provide information on method precision and sample heterogeneity.  
 - Anonymous - Client Sample IDs refer to samples which are not specifically part of this work order but formed part of the QC process lot. *Abbreviations: LOR = Limit of Reporting, RPD = Relative Percent Difference.*  
 \* Indicates failed QC. The permitted ranges for the RPD of Laboratory Duplicates (relative percent deviation) are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting:- Result < 10 times LOR, no limit - Result between 10 and 20 times LOR, 0% - 50% - Result > 20 times LOR, 0% - 20%

Matrix Type: WATER

Laboratory Duplicates (DUP) Report

Laboratory Sample ID	Client Sample ID	Analyte name	LOR	Original Result	Duplicate Result	RPD
<b>EA015: Total Dissolved Solids</b>						
<b>EA015: Total Dissolved Solids - ( QC Lot: 447037 )</b>				mg/L	mg/L	%
EB0707431-001	Anonymous	Total Dissolved Solids @180°C	1 mg/L	348	340	2.3
EB0707460-003	Anonymous	Total Dissolved Solids @180°C	1 mg/L	32	36	11.8
<b>ED037P: Alkalinity by PC Titrator</b>						
<b>ED037P: Alkalinity by PC Titrator - ( QC Lot: 448299 )</b>				mg/L	mg/L	%
EB0707537-001	81402	Hydroxide Alkalinity as CaCO3	1 mg/L	<1	<1	0.0
		Carbonate Alkalinity as CaCO3	1 mg/L	<1	<1	0.0
		Bicarbonate Alkalinity as CaCO3	1 mg/L	984	986	0.2
		Total Alkalinity as CaCO3	1 mg/L	984	986	0.2
<b>ED040F: Dissolved Major Anions</b>						
<b>ED040F: Dissolved Major Anions - ( QC Lot: 447069 )</b>				mg/L	mg/L	%
EB0707501-017	Anonymous	Sulphate as SO4 2-	1 mg/L	2680	2690	0.3
<b>ED045P: Chloride by PC Titrator</b>						
<b>ED045P: Chloride by PC Titrator - ( QC Lot: 448300 )</b>				mg/L	mg/L	%
EB0707537-001	81402	Chloride	1 mg/L	935	940	0.5
<b>ED093F: Dissolved Major Cations</b>						
<b>ED093F: Dissolved Major Cations - ( QC Lot: 447070 )</b>				mg/L	mg/L	%
EB0707501-017	Anonymous	Calcium	1 mg/L	571	550	3.8
		Magnesium	1 mg/L	870	874	0.6
		Sodium	1 mg/L	5950	5970	0.4
		Potassium	1 mg/L	284	289	1.8
EB0707537-005	20857	Calcium	1 mg/L	36	35	0.0
		Magnesium	1 mg/L	19	19	0.0
		Sodium	1 mg/L	52	52	0.0
		Potassium	1 mg/L	<1	<1	0.0
<b>EK040P: Fluoride by PC Titrator</b>						



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Matrix Type: WATER

Laboratory Duplicates (DUP) Report

Laboratory Sample ID	Client Sample ID	Analyte name	LOR	Original Result	Duplicate Result	RPD
<b>EK040P: Fluoride by PC Titrator - continued</b>						
<b>EK040P: Fluoride by PC Titrator - ( QC Lot: 448301 )</b>				mg/L	mg/L	%
EB0707537-001	81402	Fluoride	0.1 mg/L	0.4	0.4	0.0
<b>EK057: Nitrite as N</b>						
<b>EK057: Nitrite as N - ( QC Lot: 447440 )</b>				mg/L	mg/L	%
EB0707381-001	Anonymous	Nitrite as N	0.010 mg/L	0.017	0.017	0.0
EB0707494-004	Anonymous	Nitrite as N	0.010 mg/L	<0.010	<0.010	0.0
<b>EK057: Nitrite as N - ( QC Lot: 447445 )</b>				mg/L	mg/L	%
EB0707537-007	46025	Nitrite as N	0.010 mg/L	<0.010	<0.010	0.0
<b>EK059: Nitrite plus Nitrate as N (NOx)</b>						
<b>EK059: Nitrite plus Nitrate as N (NOx) - ( QC Lot: 447443 )</b>				mg/L	mg/L	%
EB0707494-004	Anonymous	Nitrite + Nitrate as N	0.010 mg/L	<0.010	<0.010	0.0
EB0707537-007	46025	Nitrite + Nitrate as N	0.010 mg/L	16.2	16.5	1.7
<b>EK071: Reactive Phosphorus as P (Dissolved)</b>						
<b>EK071: Reactive Phosphorus as P (Dissolved) - ( QC Lot: 447442 )</b>				mg/L	mg/L	%
EB0707428-001	Anonymous	Reactive Phosphorus - Filtered	0.010 mg/L	0.034	0.032	7.7
EB0707537-007	46025	Reactive Phosphorus - Filtered	0.010 mg/L	0.016	0.011	39.0

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## Quality Control Report - Method Blank (MB) and Laboratory Control Samples (LCS)

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC type is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a known, interference free matrix spiked with target analytes or certified reference material. The purpose of this QC type is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of actual laboratory data. Flagged outliers on control limits for inorganics tests may be within the NEPM specified data quality objective of recoveries in the range of 70 to 130%. Where this occurs, no corrective action is taken. Abbreviations: LOR = Limit of reporting.

Matrix Type: WATER

### Method Blank (MB) and Laboratory Control Samples (LCS) Report

Analyte name	LOR	Method blank result	Actual Results		Recovery Limits	
			Spike concentration	Spike Recovery	Dynamic Recovery Limits	
					LCS	Low
<b>EA015: Total Dissolved Solids</b>						
<b>EA015: Total Dissolved Solids - ( QC Lot: 447037 )</b>		mg/L	mg/L	%	%	%
Total Dissolved Solids @180°C	1 mg/L	----	2000	98.6	70	130
	1 mg/L	<1	----	----	----	----
<b>ED037P: Alkalinity by PC Titrator</b>						
<b>ED037P: Alkalinity by PC Titrator - ( QC Lot: 448299 )</b>		mg/L	mg/L	%	%	%
Total Alkalinity as CaCO3	1 mg/L	----	200	110	70	130
<b>ED040F: Dissolved Major Anions</b>						
<b>ED040F: Dissolved Major Anions - ( QC Lot: 447069 )</b>		mg/L	mg/L	%	%	%
Sulphate as SO4 2-	1 mg/L	<1	1	----	----	----
<b>ED045P: Chloride by PC Titrator</b>						
<b>ED045P: Chloride by PC Titrator - ( QC Lot: 448300 )</b>		mg/L	mg/L	%	%	%
Chloride	1 mg/L	----	1000	102	70	130
	1 mg/L	<1	----	----	----	----
<b>ED093F: Dissolved Major Cations</b>						
<b>ED093F: Dissolved Major Cations - ( QC Lot: 447070 )</b>		mg/L	mg/L	%	%	%
Calcium	1 mg/L	<1	----	----	----	----
Magnesium	1 mg/L	<1	----	----	----	----
Potassium	1 mg/L	<1	----	----	----	----
Sodium	1 mg/L	<1	----	----	----	----
<b>EK040P: Fluoride by PC Titrator</b>						
<b>EK040P: Fluoride by PC Titrator - ( QC Lot: 448301 )</b>		mg/L	mg/L	%	%	%
Fluoride	0.1 mg/L	----	10	87.7	70	130
	0.1 mg/L	<0.1	----	----	----	----
<b>EK057: Nitrite as N</b>						



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Matrix Type: WATER

Method Blank (MB) and Laboratory Control Samples (LCS) Report

Analyte name	LOR	Method blank result	Actual Results		Recovery Limits	
			Spike concentration	Spike Recovery	Dynamic Recovery Limits	
				LCS	Low	High
<b>EK057: Nitrite as N - continued</b>						
<b>EK057: Nitrite as N - ( QC Lot: 447440 )</b>		mg/L	mg/L	%	%	%
Nitrite as N	0.01 mg/L	----	0.5	104	70	130
	0.010 mg/L	<0.010	----	----	----	----
<b>EK057: Nitrite as N - ( QC Lot: 447445 )</b>		mg/L	mg/L	%	%	%
Nitrite as N	0.01 mg/L	----	0.5	106	70	130
	0.010 mg/L	<0.010	----	----	----	----
<b>EK059: Nitrite plus Nitrate as N (NOx)</b>						
<b>EK059: Nitrite plus Nitrate as N (NOx) - ( QC Lot: 447443 )</b>		mg/L	mg/L	%	%	%
Nitrite + Nitrate as N	0.01 mg/L	----	0.5	101	70	130
	0.010 mg/L	<0.010	----	----	----	----
<b>EK071: Reactive Phosphorus as P (Dissolved)</b>						
<b>EK071: Reactive Phosphorus as P (Dissolved) - ( QC Lot: 447442 )</b>		mg/L	mg/L	%	%	%
Reactive Phosphorus - Filtered	0.01 mg/L	----	1	99.6	70	130
	0.010 mg/L	<0.010	----	----	----	----

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## Quality Control Report - Matrix Spikes (MS)

The quality control term **Matrix Spike (MS)** refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC type is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQO's). 'Ideal' recovery ranges stated may be waived in the event of sample matrix interferences. - Anonymous - Client Sample IDs refer to samples which are not specifically part of this work order but formed part of the QC process lot. *Abbreviations: LOR = Limit of Reporting, RPD = Relative Percent Difference.*

\* Indicates failed QC

Matrix Type: WATER

Matrix Spike (MS) Report

Analyte name	Laboratory Sample ID	Client Sample ID	LOR	Spike Concentration	Actual Results		Recovery Limits	
					Sample Result	Spike Recovery	Static Limits	
						MS	Low	High
<b>ED045P: Chloride by PC Titrator</b>								
<b>ED045P: Chloride by PC Titrator - ( QC Lot: 448300 )</b>				mg/L	mg/L	%	%	%
Chloride	EB0707537-002	105763	1 mg/L	400	600	100	70	130
<b>EK040P: Fluoride by PC Titrator</b>								
<b>EK040P: Fluoride by PC Titrator - ( QC Lot: 448301 )</b>				mg/L	mg/L	%	%	%
Fluoride	EB0707537-001	81402	0.1 mg/L	4.9	0.4	92.8	70	130
<b>EK057: Nitrite as N</b>								
<b>EK057: Nitrite as N - ( QC Lot: 447440 )</b>				mg/L	mg/L	%	%	%
Nitrite as N	EB0707358-001	Anonymous	0.01 mg/L	2	0.210	105	70	130
<b>EK057: Nitrite as N - ( QC Lot: 447445 )</b>				mg/L	mg/L	%	%	%
Nitrite as N	EB0707537-003	65471	0.01 mg/L	2	<0.010	110	70	130
<b>EK059: Nitrite plus Nitrate as N (NOx)</b>								
<b>EK059: Nitrite plus Nitrate as N (NOx) - ( QC Lot: 447443 )</b>				mg/L	mg/L	%	%	%
Nitrite + Nitrate as N	EB0707494-004	Anonymous	0.01 mg/L	0.4	<0.010	84.4	70	130
<b>EK071: Reactive Phosphorus as P (Dissolved)</b>								
<b>EK071: Reactive Phosphorus as P (Dissolved) - ( QC Lot: 447442 )</b>				mg/L	mg/L	%	%	%
Reactive Phosphorus - Filtered	EB0707358-001	Anonymous	0.01 mg/L	2	<0.010	74.5	70	130

**INTERPRETIVE QUALITY CONTROL REPORT**

<b>Client</b> : CONNELL HATCH	<b>Laboratory</b> : Environmental Division Brisbane	<b>Page</b> : 1 of 7
<b>Contact</b> : MR S MURPHY	<b>Contact</b> : Tim Kilmister	
<b>Address</b> : LOCKED BAG 1800 SPRING HILL QLD AUSTRALIA 4004	<b>Address</b> : 32 Shand Street Stafford QLD Australia 4053	<b>Work order</b> : <b>EB0706857</b>
		<b>Amendment No.</b> :
<b>Project</b> : HR5001	<b>Quote number</b> : BN/262/05	<b>Date received</b> : 21 Jun 2007
<b>Order number</b> : - Not provided -		<b>Date issued</b> : 3 Jul 2007
<b>C-O-C number</b> : - Not provided -		
<b>Site</b> : JILALAN		
<b>E-mail</b> : murphyse@conwag.com	<b>E-mail</b> : Services.Brisbane@alsenviro.com	<b>No. of samples</b>
<b>Telephone</b> : 31358000	<b>Telephone</b> : 61-7-3243 7222	<b>Received</b> : 8
<b>Facsimile</b> : 31358400	<b>Facsimile</b> : 61-7-3243 7259	<b>Analysed</b> : 8

This Interpretive Quality Control Report was issued on 3 Jul 2007 for the ALS work order reference EB0706857 and supersedes any previous reports with this reference.

This report contains the following information:

- 1 Analysis Holding Time Compliance
- 1 Quality Control Type Frequency Compliance
- 1 Summary of all Quality Control Outliers
- 1 Brief Method Summaries

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## Interpretive Quality Control Report - Analysis Holding Time

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the sample aliquot was taken. Elapsed time to analysis represents time from sampling where no extraction / digestion is involved or time from extraction / digestion where this is present. For composite samples, sampling date/time is taken as that of the oldest sample contributing to that composite. Sample date/time for laboratory produced leaches are taken from the completion date/time of the leaching process. Outliers for holding time are based on USEPA SW846, APHA, AS and NEPM (1999). Failed outliers, refer to the 'Summary of Outliers'.

Matrix Type: WATER

Analysis Holding Time and Preservation

Method Container / Client Sample ID(s)	Date Sampled	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Pass?	Date analysed	Due for analysis	Pass?
<b>EG020A-F: Dissolved Metals by ICP-MS - Suite A</b>							
<b>Clear Plastic Bottle - Natural</b> 81402, 105763, 65471, 20787, 46025	19 Jun 2007	----	----	----	22 Jun 2007	16 Dec 2007	Pass
<b>Clear Plastic Bottle - Natural</b> 81920, 20857, KEAT 1	20 Jun 2007	----	----	----	22 Jun 2007	17 Dec 2007	Pass
<b>EG035F: Dissolved Mercury by FIMS</b>							
<b>Clear Plastic Bottle - Natural</b> 81402, 105763, 65471, 20787, 46025	19 Jun 2007	----	----	----	27 Jun 2007	17 Jul 2007	Pass
<b>Clear Plastic Bottle - Natural</b> 81920, 20857, KEAT 1	20 Jun 2007	----	----	----	27 Jun 2007	18 Jul 2007	Pass
<b>EP066: Polychlorinated Biphenyls (PCB)</b>							
<b>Amber Glass Bottle - Unpreserved</b> 81402, 105763, 65471, 20787, 46025	19 Jun 2007	27 Jun 2007	26 Jun 2007	Fail by 1 day	28 Jun 2007	6 Aug 2007	Pass
<b>Amber Glass Bottle - Unpreserved</b> 81920, 20857, KEAT 1	20 Jun 2007	27 Jun 2007	27 Jun 2007	Pass	28 Jun 2007	6 Aug 2007	Pass
<b>EP068: Pesticides</b>							
<b>Amber Glass Bottle - Unpreserved</b> 81402, 105763, 65471, 20787, 46025	19 Jun 2007	27 Jun 2007	26 Jun 2007	Fail by 1 day	28 Jun 2007	6 Aug 2007	Pass
<b>Amber Glass Bottle - Unpreserved</b> 81920, 20857, KEAT 1	20 Jun 2007	27 Jun 2007	27 Jun 2007	Pass	28 Jun 2007	6 Aug 2007	Pass
<b>EP071: TPH - Semivolatile Fraction</b>							
<b>Amber Glass Bottle - Unpreserved</b> 81402, 105763, 65471, 20787, 46025	19 Jun 2007	27 Jun 2007	26 Jun 2007	Fail by 1 day	28 Jun 2007	6 Aug 2007	Pass



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**Matrix Type: WATER**

**Analysis Holding Time and Preservation**

Method Container / Client Sample ID(s)	Date Sampled	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Pass?	Date analysed	Due for analysis	Pass?	
<b>EP071: TPH - Semivolatile Fraction - continued</b>								
<b>Amber Glass Bottle - Unpreserved</b> 81920, KEAT 1	20857,	20 Jun 2007	27 Jun 2007	27 Jun 2007	Pass	28 Jun 2007	6 Aug 2007	Pass
<b>EP075(SIM): PAH/Phenols (GC/MS - SIM)</b>								
<b>Amber Glass Bottle - Unpreserved</b> 81402, 65471, 46025	105763, 20787,	19 Jun 2007	27 Jun 2007	26 Jun 2007	Fail by 1 day	28 Jun 2007	6 Aug 2007	Pass
<b>Amber Glass Bottle - Unpreserved</b> 81920, KEAT 1	20857,	20 Jun 2007	27 Jun 2007	27 Jun 2007	Pass	28 Jun 2007	6 Aug 2007	Pass
<b>EP080: TPH Volatiles/BTEX</b>								
<b>Amber VOC Vial - HCl or NaHSO4</b> 81402, 65471, 46025	105763, 20787,	19 Jun 2007	----	----	----	27 Jun 2007	3 Jul 2007	Pass
<b>Amber VOC Vial - HCl or NaHSO4</b> 81920, KEAT 1	20857,	20 Jun 2007	----	----	----	27 Jun 2007	4 Jul 2007	Pass

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## Interpretive Quality Control Report - Frequency of Quality Control Samples

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which this work order was processed. Actual rate should be greater than or equal to the expected rate.

### Matrix Type: WATER

### Frequency of Quality Control Samples

Quality Control Sample Type Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
<b>Laboratory Duplicates (DUP)</b>					
EG020A-F: Dissolved Metals by ICP-MS - Suite A	5	42	11.9	10.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EG035F: Dissolved Mercury by FIMS	3	23	13.0	10.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP080: TPH Volatiles/BTEX	2	19	10.5	10.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>					
EG020A-F: Dissolved Metals by ICP-MS - Suite A	3	42	7.1	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EG035F: Dissolved Mercury by FIMS	2	23	8.7	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP066: Polychlorinated Biphenyls (PCB)	1	8	12.5	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP068: Pesticides	1	8	12.5	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP071: TPH - Semivolatile Fraction	1	15	6.7	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP075(SIM): PAH/Phenols (GC/MS - SIM)	1	13	7.7	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP080: TPH Volatiles/BTEX	1	19	5.3	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
<b>Method Blanks (MB)</b>					
EG020A-F: Dissolved Metals by ICP-MS - Suite A	3	42	7.1	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EG035F: Dissolved Mercury by FIMS	2	23	8.7	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP066: Polychlorinated Biphenyls (PCB)	1	8	12.5	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP068: Pesticides	1	8	12.5	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP071: TPH - Semivolatile Fraction	1	15	6.7	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP075(SIM): PAH/Phenols (GC/MS - SIM)	1	13	7.7	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP080: TPH Volatiles/BTEX	1	19	5.3	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
<b>Matrix Spikes (MS)</b>					
EG020A-F: Dissolved Metals by ICP-MS - Suite A	3	42	7.1	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EG035F: Dissolved Mercury by FIMS	2	23	8.7	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP080: TPH Volatiles/BTEX	1	19	5.3	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement



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## Interpretive Quality Control Report - Summary of Outliers

### Outliers : Quality Control Samples

The following report highlights outliers flagged on the 'Quality Control Report'. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). Flagged outliers on control limits for inorganics tests may be within the NEPM specified data quality objective of recoveries in the range of 70 to 130%. Where this occurs, no corrective action is taken. - Anonymous - Client Sample IDs refer to samples which are not specifically part of this work order but formed part of the QC process lot.

### **Non-surrogates**

- 1 For all matrices, no RPD recovery outliers occur for the duplicate analysis.
- 1 For all matrices, no method blank result outliers occur.
- 1 For all matrices, no laboratory spike recoveries breaches occur.
- 1 For all matrices, no matrix spike recoveries breaches occur.

### **Surrogates**

ALS QC Lot	Matrix Type	Laboratory Sample ID	Client Sample ID	Analyte	Data	Limits	Comment
<b>Surrogates</b>							
EP068T: Organophosphorus Pesticide Surrogate	WATER	EB0706857-001	81402	DEF	119 %	10-110 %	Recovery greater than upper data quality objective
	WATER	EB0706857-002	105763	DEF	115 %	10-110 %	Recovery greater than upper data quality objective

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**Outliers : Analysis Holding Time**

The following report highlights outliers within this 'Interpretive Quality Control Report - Analysis Holding Time'.

Method Container / Client Sample ID(s)	Date Sampled	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Pass?	Date analysed	Due for analysis	Pass?	
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
<b>Amber Glass Bottle - Unpreserved</b> 81402, 65471, 46025	105763, 20787,	19 Jun 2007	27 Jun 2007	26 Jun 2007	Fail by 1 day	28 Jun 2007	6 Aug 2007	Pass
<b>EP068: Pesticides</b>								
<b>Amber Glass Bottle - Unpreserved</b> 81402, 65471, 46025	105763, 20787,	19 Jun 2007	27 Jun 2007	26 Jun 2007	Fail by 1 day	28 Jun 2007	6 Aug 2007	Pass
<b>EP071: TPH - Semivolatile Fraction</b>								
<b>Amber Glass Bottle - Unpreserved</b> 81402, 65471, 46025	105763, 20787,	19 Jun 2007	27 Jun 2007	26 Jun 2007	Fail by 1 day	28 Jun 2007	6 Aug 2007	Pass
<b>EP075(SIM): PAH/Phenols (GC/MS - SIM)</b>								
<b>Amber Glass Bottle - Unpreserved</b> 81402, 65471, 46025	105763, 20787,	19 Jun 2007	27 Jun 2007	26 Jun 2007	Fail by 1 day	28 Jun 2007	6 Aug 2007	Pass

**Outliers : Frequency of Quality Control Samples**

The following report highlights outliers within this 'Interpretive Quality Control Report - Frequency of Quality Control Samples'.

- 1 No frequency outliers occur.



## Method Reference Summary

The analytical procedures used by ALS Environmental are based on established internationally-recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house procedure are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported herein. Reference methods from which ALSE methods are based are provided in parenthesis.

Matrix Type: WATER

Method Reference Summary

### Preparation Methods

**ORG14 : Separatory Funnel Extraction of Liquids** - USEPA SW 846 - 3510B 500 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2). ALS default excludes sediment which may be resident in the container.

### Analytical Methods

**EG020A-F : Dissolved Metals by ICP-MS - Suite A** - (APHA 21st ed., 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020): The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.

**EG035F : Dissolved Mercury by FIMS** - AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCl<sub>2</sub>)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl<sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

**EP066 : Polychlorinated Biphenyls (PCB)** - USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

**EP068 : Pesticides** - USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

**EP071 : TPH - Semivolatile Fraction** - USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

**EP075(SIM) : PAH/Phenols (GC/MS - SIM)** - USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

**EP080 : TPH Volatiles/BTEX** - USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

**INTERPRETIVE QUALITY CONTROL REPORT**

<b>Client</b> :	<b>CONNELL HATCH</b>	<b>Laboratory</b> :	Environmental Division Brisbane	<b>Page</b> :	1 of 8
<b>Contact</b> :	MR S MURPHY	<b>Contact</b> :	Tim Kilmister	<b>Work order</b> :	<b>EB0707537</b>
<b>Address</b> :	LOCKED BAG 1800 SPRING HILL QLD AUSTRALIA 4004	<b>Address</b> :	32 Shand Street Stafford QLD Australia 4053	<b>Amendment No.</b> :	
<b>Project</b> :	HR5001	<b>Quote number</b> :	BN/262/05	<b>Date received</b> :	9 Jul 2007
<b>Order number</b> :	- Not provided -			<b>Date issued</b> :	11 Jul 2007
<b>C-O-C number</b> :	- Not provided -				
<b>Site</b> :	JILALAN				
<b>E-mail</b> :	murphyse@conwag.com	<b>E-mail</b> :	Services.Brisbane@alsenviro.com	<b>No. of samples</b>	
<b>Telephone</b> :	31358000	<b>Telephone</b> :	61-7-3243 7222	<b>Received</b> :	8
<b>Facsimile</b> :	31358400	<b>Facsimile</b> :	61-7-3243 7259	<b>Analysed</b> :	8

This Interpretive Quality Control Report was issued on 11 Jul 2007 for the ALS work order reference EB0707537 and supersedes any previous reports with this reference.

This report contains the following information:

- 1 Analysis Holding Time Compliance
- 1 Quality Control Type Frequency Compliance
- 1 Summary of all Quality Control Outliers
- 1 Brief Method Summaries

Client : CONNELL HATCH  
Project : HR5001

Work Order : EB0707537  
ALS Quote Reference : BN/262/05

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Issue Date : 11 Jul 2007

## Interpretive Quality Control Report - Analysis Holding Time

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the sample aliquot was taken. Elapsed time to analysis represents time from sampling where no extraction / digestion is involved or time from extraction / digestion where this is present. For composite samples, sampling date/time is taken as that of the oldest sample contributing to that composite. Sample date/time for laboratory produced leaches are taken from the completion date/time of the leaching process. Outliers for holding time are based on USEPA SW846, APHA, AS and NEPM (1999). Failed outliers, refer to the 'Summary of Outliers'.

Matrix Type: WATER

Analysis Holding Time and Preservation

Method Container / Client Sample ID(s)	Date Sampled	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Pass?	Date analysed	Due for analysis	Pass?
<b>EA015: Total Dissolved Solids</b>							
<b>Clear Plastic Bottle - Natural</b> 81402, 105763, 65471, 20787, 46025	<b>19 Jun 2007</b>	----	----	----	<b>10 Jul 2007</b>	26 Jun 2007	<b>Fail by 14 days</b>
<b>Clear Plastic Bottle - Natural</b> 81920, 20857, KEAT1	<b>20 Jun 2007</b>	----	----	----	<b>10 Jul 2007</b>	27 Jun 2007	<b>Fail by 13 days</b>
<b>ED037-P: Alkalinity by PC Titrator</b>							
<b>Clear Plastic Bottle - Natural</b> 81402, 105763, 65471, 20787, 46025	<b>19 Jun 2007</b>	----	----	----	<b>11 Jul 2007</b>	3 Jul 2007	<b>Fail by 8 days</b>
<b>Clear Plastic Bottle - Natural</b> 81920, 20857, KEAT1	<b>20 Jun 2007</b>	----	----	----	<b>11 Jul 2007</b>	4 Jul 2007	<b>Fail by 7 days</b>
<b>ED040F: Major Anions - Filtered</b>							
<b>Clear Plastic Bottle - Natural</b> 81402, 105763, 65471, 20787, 46025	<b>19 Jun 2007</b>	----	----	----	<b>10 Jul 2007</b>	17 Jul 2007	Pass
<b>Clear Plastic Bottle - Natural</b> 81920, 20857, KEAT1	<b>20 Jun 2007</b>	----	----	----	<b>10 Jul 2007</b>	18 Jul 2007	Pass
<b>ED045-P: Chloride by PC Titrator</b>							
<b>Clear Plastic Bottle - Natural</b> 81402, 105763, 65471, 20787, 46025	<b>19 Jun 2007</b>	----	----	----	<b>11 Jul 2007</b>	17 Jul 2007	Pass
<b>Clear Plastic Bottle - Natural</b> 81920, 20857, KEAT1	<b>20 Jun 2007</b>	----	----	----	<b>11 Jul 2007</b>	18 Jul 2007	Pass
<b>ED093F: Major Cations - Filtered</b>							
<b>Clear Plastic Bottle - Natural</b> 81402, 105763, 65471, 20787, 46025	<b>19 Jun 2007</b>	----	----	----	<b>10 Jul 2007</b>	17 Jul 2007	Pass

Client : CONNELL HATCH  
 Project : HR5001

Work Order : EB0707537  
 ALS Quote Reference : BN/262/05

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**Matrix Type: WATER**

**Analysis Holding Time and Preservation**

Method Container / Client Sample ID(s)	Date Sampled	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Pass?	Date analysed	Due for analysis	Pass?	
<b>ED093F: Major Cations - Filtered - continued</b>								
<b>Clear Plastic Bottle - Natural</b> 81920, KEAT1	20857,	20 Jun 2007	----	----	----	10 Jul 2007	18 Jul 2007	Pass
<b>EK040P: Fluoride by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural</b> 81402, 65471, 46025	105763, 20787,	19 Jun 2007	----	----	----	11 Jul 2007	17 Jul 2007	Pass
<b>Clear Plastic Bottle - Natural</b> 81920, KEAT1	20857,	20 Jun 2007	----	----	----	11 Jul 2007	18 Jul 2007	Pass
<b>EK057: Nitrite as N</b>								
<b>Clear Plastic Bottle - Natural</b> 81402, 65471, 46025	105763, 20787,	19 Jun 2007	----	----	----	10 Jul 2007	21 Jun 2007	Fail by 19 days
<b>Clear Plastic Bottle - Natural</b> 81920, KEAT1	20857,	20 Jun 2007	----	----	----	10 Jul 2007	22 Jun 2007	Fail by 18 days
<b>EK059: Nitrite and Nitrate as N (NOx)</b>								
<b>Clear Plastic Bottle - Natural</b> 81402, 65471, 46025	105763, 20787,	19 Jun 2007	----	----	----	10 Jul 2007	21 Jun 2007	Fail by 19 days
<b>Clear Plastic Bottle - Natural</b> 81920, KEAT1	20857,	20 Jun 2007	----	----	----	10 Jul 2007	22 Jun 2007	Fail by 18 days
<b>EK071F: Reactive Phosphorus - Filtered</b>								
<b>Clear Plastic Bottle - Natural</b> 81402, 65471, 46025	105763, 20787,	19 Jun 2007	----	----	----	10 Jul 2007	21 Jun 2007	Fail by 19 days
<b>Clear Plastic Bottle - Natural</b> 81920, KEAT1	20857,	20 Jun 2007	----	----	----	10 Jul 2007	22 Jun 2007	Fail by 18 days

Client : CONNELL HATCH  
 Project : HR5001

Work Order : EB0707537  
 ALS Quote Reference : BN/262/05

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## Interpretive Quality Control Report - Frequency of Quality Control Samples

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which this work order was processed. Actual rate should be greater than or equal to the expected rate.

**Matrix Type: WATER**

**Frequency of Quality Control Samples**

Quality Control Sample Type Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
<b>Laboratory Duplicates (DUP)</b>					
EA015: Total Dissolved Solids	2	20	10.0	10.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
ED037-P: Alkalinity by PC Titrator	1	8	12.5	10.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
ED040F: Major Anions - Filtered	2	20	10.0	10.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
ED045-P: Chloride by PC Titrator	1	8	12.5	10.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
ED093F: Major Cations - Filtered	2	13	15.4	10.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EK040P: Fluoride by PC Titrator	1	8	12.5	10.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EK057: Nitrite as N	3	26	11.5	10.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EK059: Nitrite and Nitrate as N (NOx)	2	20	10.0	10.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EK071F: Reactive Phosphorus - Filtered	2	12	16.7	10.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>					
EA015: Total Dissolved Solids	1	20	5.0	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
ED037-P: Alkalinity by PC Titrator	1	8	12.5	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
ED045-P: Chloride by PC Titrator	1	8	12.5	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EK040P: Fluoride by PC Titrator	1	8	12.5	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EK057: Nitrite as N	2	26	7.7	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EK059: Nitrite and Nitrate as N (NOx)	1	20	5.0	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EK071F: Reactive Phosphorus - Filtered	1	12	8.3	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
<b>Method Blanks (MB)</b>					
EA015: Total Dissolved Solids	1	20	5.0	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
ED040F: Major Anions - Filtered	1	20	5.0	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
ED045-P: Chloride by PC Titrator	1	8	12.5	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
ED093F: Major Cations - Filtered	1	13	7.7	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EK040P: Fluoride by PC Titrator	1	8	12.5	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EK057: Nitrite as N	2	26	7.7	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EK059: Nitrite and Nitrate as N (NOx)	1	20	5.0	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EK071F: Reactive Phosphorus - Filtered	1	12	8.3	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
<b>Matrix Spikes (MS)</b>					
ED045-P: Chloride by PC Titrator	1	8	12.5	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EK040P: Fluoride by PC Titrator	1	8	12.5	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EK057: Nitrite as N	2	26	7.7	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EK059: Nitrite and Nitrate as N (NOx)	1	20	5.0	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EK071F: Reactive Phosphorus - Filtered	1	12	8.3	5.0	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement

Client : CONNELL HATCH  
Project : HR5001

Work Order : EB0707537  
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## ***Interpretive Quality Control Report - Summary of Outliers***

### **Outliers : Quality Control Samples**

The following report highlights outliers flagged on the 'Quality Control Report'. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). Flagged outliers on control limits for inorganics tests may be within the NEPM specified data quality objective of recoveries in the range of 70 to 130%. Where this occurs, no corrective action is taken. - Anonymous - Client Sample IDs refer to samples which are not specifically part of this work order but formed part of the QC process lot.

#### ***Non-surrogates***

- 1 For all matrices, no RPD recovery outliers occur for the duplicate analysis.
- 1 For all matrices, no method blank result outliers occur.
- 1 For all matrices, no laboratory spike recoveries breaches occur.
- 1 For all matrices, no matrix spike recoveries breaches occur.

#### ***Surrogates***

- 1 For all matrices, no surrogate recovery outliers occur.

Client : CONNELL HATCH  
 Project : HR5001

Work Order : EB0707537  
 ALS Quote Reference : BN/262/05

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 Issue Date : 11 Jul 2007

### Outliers : Analysis Holding Time

The following report highlights outliers within this 'Interpretive Quality Control Report - Analysis Holding Time'.

Method Container / Client Sample ID(s)	Date Sampled	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Pass?	Date analysed	Due for analysis	Pass?
<b>EA015: Total Dissolved Solids</b>							
<b>Clear Plastic Bottle - Natural</b> 81402, 65471, 46025	105763, 20787,	19 Jun 2007	----	----	----	10 Jul 2007	26 Jun 2007 <b>Fail by 14 days</b>
<b>EA015: Total Dissolved Solids</b>							
<b>Clear Plastic Bottle - Natural</b> 81920, KEAT1	20857,	20 Jun 2007	----	----	----	10 Jul 2007	27 Jun 2007 <b>Fail by 13 days</b>
<b>ED037-P: Alkalinity by PC Titrator</b>							
<b>Clear Plastic Bottle - Natural</b> 81402, 65471, 46025	105763, 20787,	19 Jun 2007	----	----	----	11 Jul 2007	3 Jul 2007 <b>Fail by 8 days</b>
<b>ED037-P: Alkalinity by PC Titrator</b>							
<b>Clear Plastic Bottle - Natural</b> 81920, KEAT1	20857,	20 Jun 2007	----	----	----	11 Jul 2007	4 Jul 2007 <b>Fail by 7 days</b>
<b>EK057: Nitrite as N</b>							
<b>Clear Plastic Bottle - Natural</b> 81402, 65471, 46025	105763, 20787,	19 Jun 2007	----	----	----	10 Jul 2007	21 Jun 2007 <b>Fail by 19 days</b>
<b>EK057: Nitrite as N</b>							
<b>Clear Plastic Bottle - Natural</b> 81920, KEAT1	20857,	20 Jun 2007	----	----	----	10 Jul 2007	22 Jun 2007 <b>Fail by 18 days</b>
<b>EK059: Nitrite and Nitrate as N (NOx)</b>							
<b>Clear Plastic Bottle - Natural</b> 81402, 65471, 46025	105763, 20787,	19 Jun 2007	----	----	----	10 Jul 2007	21 Jun 2007 <b>Fail by 19 days</b>
<b>EK059: Nitrite and Nitrate as N (NOx)</b>							
<b>Clear Plastic Bottle - Natural</b> 81920, KEAT1	20857,	20 Jun 2007	----	----	----	10 Jul 2007	22 Jun 2007 <b>Fail by 18 days</b>

Client : CONNELL HATCH  
 Project : HR5001

Work Order : EB0707537  
 ALS Quote Reference : BN/262/05

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 Issue Date : 11 Jul 2007

Method Container / Client Sample ID(s)	Date Sampled	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Pass?	Date analysed	Due for analysis	Pass?	
EK071F: Reactive Phosphorus - Filtered								
<b>Clear Plastic Bottle - Natural</b> 81402, 65471, 46025	105763, 20787,	19 Jun 2007	----	----	----	10 Jul 2007	21 Jun 2007	Fail by 19 days
EK071F: Reactive Phosphorus - Filtered								
<b>Clear Plastic Bottle - Natural</b> 81920, KEAT1	20857,	20 Jun 2007	----	----	----	10 Jul 2007	22 Jun 2007	Fail by 18 days

**Outliers : Frequency of Quality Control Samples**

The following report highlights outliers within this 'Interpretive Quality Control Report - Frequency of Quality Control Samples'.

- 1 No frequency outliers occur.



## Method Reference Summary

The analytical procedures used by ALS Environmental are based on established internationally-recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house procedure are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported herein. Reference methods from which ALSE methods are based are provided in parenthesis.

**Matrix Type: WATER**

**Method Reference Summary**

### Analytical Methods

**EA015 : Total Dissolved Solids - APHA 21st ed., 2540C** A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+5C. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

**ED037-P : Alkalinity by PC Titrator - APHA 21st ed., 2320 B** This procedure determines alkalinity by both manual measurement and automated measurement (e.g. PC Titrate) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

**ED040F : Major Anions - Filtered - APHA 21st ed., 3120** Sulphur and Silcon content is determined by ICP/AES and reported as Sulphate after conversion by gravimetric factor.

**ED045-P : Chloride by PC Titrator - APHA 21st ed., 4500 Cl - B.** Automated Silver Nitrate titration.

**ED093F : Major Cations - Filtered - APHA 21st ed., 3120; USEPA SW 846 - 6010** The ICPAES technique ionises filtered sample atoms emitting a characteristic spectrum. This spectrum is then compared against matrix matched standards for quantification. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

**EK040P : Fluoride by PC Titrator - APHA 21st ed., 4500 F--C** CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

**EK057 : Nitrite as N - APHA 21st ed., 4500 NO3- I.** Nitrite is determined by direct colourimetry by FIA. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

**EK058 : Nitrate as N - APHA 21st ed., 4500 NO3--I** Nitrate is reduced to nitrite by way of a cadmium reduction column followed by quantification by FIA. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

**EK059 : Nitrite and Nitrate as N (NOx) - APHA 21st ed., 4500 NO3- I.** Combined oxidised Nitrogen (NO2+NO3) is determined by Cadmium Reduction and direct colourimetry by FIA. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

**EK071F : Reactive Phosphorus - Filtered - APHA 21st ed., 4500 P-E** Water samples are filtered through a 0.45um filter prior to analysis. Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is achieved by FIA. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

**EN055 : Ionic Balance - APHA 21st Ed. 1030F.** This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

# CHAIN OF CUSTODY DOCUMENTATION



ALS Laboratory Group

CLIENT: CONNELL HATCH  
 ADDRESS/OFFICE: BOUNDARY ST, SPRING HILL  
 PROJECT MANAGER (PM): NICOLA RAE  
 PROJECT ID: HR5001  
 SITE: JILALAN P.O. NO.:

SAMPLER: S. MURPHY  
 MOBILE: 0423 859 755  
 PHONE: 3135 8000  
 EMAIL REPORT TO: murphyse@comway.com  
 EMAIL INVOICE TO: (if different to report)

RESULTS REQUIRED (Date): QUOTE NO.:

ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)

FOR LABORATORY USE ONLY:  
 COOLER SEAL (circle appropriate)  
 Intact: Yes No NA  
 SAMPLE TEMPERATURE  
 CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

TBA.

Environmental Division Brisbane Work Order <b>EB0706857</b>												
Telephone : 61-7-3243 7222												

Notes: e.g. Highly contaminated samples  
 e.g. "High PAHs expected".  
 Extra volume for QC or trace LORs etc.

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION	
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles
1	81402	W	19/6		2P/AG/VS	4
2	105763	W	19/6		"	4
3	65471	W	19/6		"	4
4	81920	W	20/6		"	4
5	20857	W	20/6		"	4
6	20787	W	19/6		"	4
7	46025	W	19/6		"	4
8	KEAT 1	W	20/6		"	4

RELINQUISHED BY:  
 Name: SEAN MURPHY Date: 20/6/07  
 Of: CONNELL HATCH Time: 5:00PM  
 Name: Date: Of: Time:

RECEIVED BY:  
 Name: J. O'Connell Date: 21/6/07  
 Of: ALS Time: 0910  
 Name: Date: Of: Time:

METHOD OF SHIPMENT:  
 Con' Note No: TNT  
 Transport Co: 874440911

**Water Container Codes:** P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved;  
 V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;  
 Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

## Vanessa Turnbull

---

**From:** Tim Kilmister  
**Sent:** Monday, 9 July 2007 3:54 PM  
**To:** Samples Brisbane  
**Cc:** Maggie Kahi; Vanessa Turnbull  
**Subject:** FW: Additional Analysis request

Sample Receipt

Please rebatch - due Wednesday 11th.

Regards  
Tim Kilmister  
Laboratory Manager  
ALS Laboratory Group  
Brisbane, Australia  
Phone: + 61 7 3243 7222  
Fax: + 61 7 3243 7259  
www.alsglobal.com

-----Original Message-----

**From:** Sean Murphy [mailto:MurphySe@conwag.com]  
**Sent:** Monday, 9 July 2007 3:33 PM  
**To:** Tim Kilmister  
**Subject:** Additional Analysis request

Tim,

In response to our conversation earlier this afternoon regarding Workorder EB0706857, I would like to order additional analysis of water samples as follows:

Sample No's <sup>6</sup>20787, <sup>2</sup>105763, <sup>4</sup>81920, <sup>1</sup>81402, <sup>3</sup>65471, <sup>5</sup>20857, <sup>67</sup>46025 & <sup>8</sup>Keat1 all to be analysed for Total dissolved solids, major cations and, major and minor anions.

Please do not hesitate to contact me should you require and clarification

Regards

Sean Murphy  
Senior Hydrogeologist

Connell Wagner  
Tel. +61 7 3135 8749  
Fax +61 7 3135 8203  
Email: MurphySe@conwag.com  
Web: www.conwag.com

---

A person using Connell Wagner drawings and other data accepts the risk of :  
\* Using the drawings and other data in electronic form without requesting and checking them for accuracy against the original hard copy version ;  
\* Using the drawings or other data for any purpose not agreed to in writing by Connell Wagner. (ABN 54 005 139 873)

FAKED

Environmental Division  
Brisbane

Work Order  
**EB0707537**



Telephone : 61-7-3243 7222



**ALS Environmental**

## SAMPLE RECEIPT NOTIFICATION (SRN)

### Comprehensive report

#### Client Details

Client : **CONNELL HATCH**  
Contact : **MR S MURPHY**  
Address : LOCKED BAG 1800 SPRING HILL QLD  
AUSTRALIA 4004  
Project : **HR5001**  
Order number : - **Not provided** -  
C-O-C Number : - **Not provided** -  
Site : **JILALAN**  
Sampler : **S MURPHY**  
E-mail : murphyse@conwag.com  
Telephone : 31358000  
Facsimile : 31358400

#### Laboratory Details

Laboratory : **Environmental Division Brisbane**  
Manager : **Tim Kilmister**  
Address : 32 Shand Street Stafford QLD Australia 4053  
Quote number : EB20060188  
Work order : **EB0706857**  
E-mail : Services.Brisbane@alsenviro.com  
Telephone : 61-7-3243 7222  
Facsimile : 61-7-3243 7259

#### Dates

Date Samples Received : 21 Jun 2007  
SRA Issue Date : 22 Jun 2007  
Scheduled Reporting Date : **3 Jul 2007**  
Client Requested Date : 3 Jul 2007

#### Delivery Details

Mode of Delivery : Carrier. Temperature : 14.2 C - Ice bricks present  
No. of coolers/boxes : 1 LARGE 1 MEDIUM No. of samples - Received 8  
Security Seal : Intact. - Analysed 8

#### Comments

- 1 **Sample containers do not comply to pretreatment / preservation standards (AS, APHA, USEPA). Please refer to the 'Sample Container(s) / Preservation Non-Compliance Log' at the end of this report for details.**
- 1 **Sample(s) have been received within recommended holding times.**
- 1 Please direct any turn around / technical queries to the laboratory contact designated above.
- 1 Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.
- 1 Please direct any queries related to sample condition / numbering / breakages to Maggi Kahi.
- 1 Analytical work for this work order will be conducted at ALSE Brisbane.
- 1 When the sampling time is not supplied on the COC documentation, ALSE defaults the sampling time to that of the COC 'relinquishment' time (if supplied). If this also is not supplied, ALSE defaults the sampling time to the 'time of receipt at Laboratory'.

**Disclaimer** : This document contains privileged and confidential information intended only for the use of the addressee. If you are not the addressee, you are hereby notified that you must not disseminate, copy or take action of its contents. If you have received this document in error, please notify ALS immediately.

**SAMPLE RECEIPT NOTIFICATION (SRN) - continued**

Client : CONNELL HATCH  
 Project : HR5001

Work Order : EB0706857  
 ALS Quote Reference : EB20060188



**Summary of Sample(s) / Container(s) and Requested Analysis**

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as moisture and preparation tasks, that form an implicit part of that package.

ALS Sample ID.	Client Sample ID - Sample Date	Requested Analysis									
		W-16 - WATER TPH/BTX/PAH/OC/OP/PCB/8 Metals									
EB0706857-001	81402 - 19 Jun 2007										
EB0706857-002	105763 - 19 Jun 2007										
EB0706857-003	65471 - 19 Jun 2007										
EB0706857-004	81920 - 20 Jun 2007										
EB0706857-005	20857 - 20 Jun 2007										
EB0706857-006	20787 - 19 Jun 2007										
EB0706857-007	46025 - 19 Jun 2007										
EB0706857-008	KEAT 1 - 20 Jun 2007										
<b>Total(s) :</b>		<b>8</b>									

**SAMPLE RECEIPT NOTIFICATION (SRN) - continued**



Client : CONNELL HATCH  
 Project : HR5001

Work Order : EB0706857  
 ALS Quote Reference : EB20060188

**Requested Reports**

<b>1 MR S MURPHY</b>			
- A4 - AU Certificate of Analysis - NEPM format	Email	murphyse@conwag.com	
- A4 - AU Quality Control Report - NEPM format	Email	murphyse@conwag.com	
- A4 - AU Interpretive Quality Control Report - NEPM format	Email	murphyse@conwag.com	
- EDI Format - ENMRG	Email	murphyse@conwag.com	
- EDI Format - XTab	Email	murphyse@conwag.com	
- Default - Chain of Custody	Email	murphyse@conwag.com	
- A4 - AU Sample Receipt Notification - Comprehensive format	Email	murphyse@conwag.com	
- A4 - AU Tax Invoice	Email	murphyse@conwag.com	

**Sample Container(s) / Preservation Non-Compliance Log**

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

Method Client Sample ID ( ALS Sample ID. )	Sample Container Received	Preferred Sample Container for Analysis
<b>1 EG020A-F : Dissolved Metals by ICP-MS - Suite A</b>		
- 81402 (EB0706857-001)	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Filtered
- 105763 (EB0706857-002)	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Filtered
- 65471 (EB0706857-003)	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Filtered
- 81920 (EB0706857-004)	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Filtered
- 20857 (EB0706857-005)	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Filtered
- 20787 (EB0706857-006)	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Filtered
- 46025 (EB0706857-007)	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Filtered
- KEAT 1 (EB0706857-008)	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Filtered
<b>1 EG035F : Dissolved Mercury by FIMS</b>		
- 81402 (EB0706857-001)	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Filtered
- 105763 (EB0706857-002)	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Filtered
- 65471 (EB0706857-003)	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Filtered
- 81920 (EB0706857-004)	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Filtered
- 20857 (EB0706857-005)	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Filtered
- 20787 (EB0706857-006)	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Filtered
- 46025 (EB0706857-007)	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Filtered
- KEAT 1 (EB0706857-008)	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Filtered