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Envirolab Services Pty Ltd - Sydney | ABN 37 112 535 645

CERTIFICATE OF ANALYSIS

167400

Client:

Douglas Partners Pty Ltd
96 Hermitage Rd
West Ryde
NSW 2114

Attention: John Russell, Chris Bagia

Sample log in details:

Your Reference:	71459.09, Prop Residential Development, Moorebank
No. of samples:	7 Waters
Date samples received / completed instructions received	18/05/17 / 18/05/17

Analysis Details:

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date: 25/05/17 / 25/05/17
Date of Preliminary Report: Not Issued

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Results Approved By:

David Springer
General Manager



Envirolab Reference: 167400
Revision No: R 00

vTRH(C6-C10)/BTEXN in Water						
Our Reference:	UNITS	167400-1	167400-2	167400-3	167400-4	167400-6
Your Reference	-----	SW1	SW2	SW3	SW4	Trip Spike
	-					
Date Sampled	-----	17/05/2017	17/05/2017	17/05/2017	17/05/2017	17/05/2017
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/05/2017	18/05/2017	18/05/2017	18/05/2017	18/05/2017
Date analysed	-	19/05/2017	19/05/2017	19/05/2017	19/05/2017	19/05/2017
TRHC ₆ - C ₉	µg/L	<10	<10	<10	<10	[NA]
TRHC ₆ - C ₁₀	µg/L	<10	<10	<10	<10	[NA]
TRHC ₆ - C ₁₀ less BTEX (F1)	µg/L	<10	<10	<10	<10	[NA]
Benzene	µg/L	<1	<1	<1	<1	99%
Toluene	µg/L	<1	<1	<1	<1	104%
Ethylbenzene	µg/L	<1	<1	<1	<1	104%
m+p-xylene	µg/L	<2	<2	<2	<2	114%
o-xylene	µg/L	<1	<1	<1	<1	117%
Naphthalene	µg/L	<1	<1	<1	<1	[NA]
Surrogate Dibromofluoromethane	%	104	107	104	104	102
Surrogate toluene-d8	%	102	108	118	120	106
Surrogate 4-BFB	%	101	111	104	98	118

vTRH(C6-C10)/BTEXN in Water		
Our Reference:	UNITS	167400-7
Your Reference	-----	Trip Blank
	-	
Date Sampled	-----	17/05/2017
Type of sample		Water
Date extracted	-	18/05/2017
Date analysed	-	19/05/2017
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Surrogate Dibromofluoromethane	%	104
Surrogate toluene-d8	%	103
Surrogate 4-BFB	%	99

svTRH (C10-C40) in Water					
Our Reference:	UNITS	167400-1	167400-2	167400-3	167400-4
Your Reference	-----	SW1	SW2	SW3	SW4
	-				
Date Sampled	-----	17/05/2017	17/05/2017	17/05/2017	17/05/2017
Type of sample		Water	Water	Water	Water
Date extracted	-	23/05/2017	23/05/2017	23/05/2017	23/05/2017
Date analysed	-	23/05/2017	23/05/2017	23/05/2017	23/05/2017
TRHC ₁₀ - C ₁₄	µg/L	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	µg/L	<100	<100	<100	<100
TRHC ₂₉ - C ₃₆	µg/L	<100	<100	<100	<100
TRH>C ₁₀ - C ₁₆	µg/L	<50	<50	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	µg/L	<50	<50	<50	<50
TRH>C ₁₆ - C ₃₄	µg/L	<100	<100	<100	<100
TRH>C ₃₄ - C ₄₀	µg/L	<100	<100	<100	<100
Surrogate o-Terphenyl	%	74	63	72	83

PAHs in Water Our Reference: Your Reference	UNITS ----- -	167400-1 SW1	167400-2 SW2	167400-3 SW3	167400-4 SW4
Date Sampled Type of sample	----- -----	17/05/2017 Water	17/05/2017 Water	17/05/2017 Water	17/05/2017 Water
Date extracted	-	23/05/2017	23/05/2017	23/05/2017	23/05/2017
Date analysed	-	24/05/2017	24/05/2017	24/05/2017	24/05/2017
Naphthalene	µg/L	<1	<1	<1	<1
Acenaphthylene	µg/L	<1	<1	<1	<1
Acenaphthene	µg/L	<1	<1	<1	<1
Fluorene	µg/L	<1	<1	<1	<1
Phenanthrene	µg/L	<1	<1	<1	<1
Anthracene	µg/L	<1	<1	<1	<1
Fluoranthene	µg/L	<1	<1	<1	<1
Pyrene	µg/L	<1	<1	<1	<1
Benzo(a)anthracene	µg/L	<1	<1	<1	<1
Chrysene	µg/L	<1	<1	<1	<1
Benzo(b,j+k)fluoranthene	µg/L	<2	<2	<2	<2
Benzo(a)pyrene	µg/L	<1	<1	<1	<1
Indeno(1,2,3-c,d)pyrene	µg/L	<1	<1	<1	<1
Dibenzo(a,h)anthracene	µg/L	<1	<1	<1	<1
Benzo(g,h,i)perylene	µg/L	<1	<1	<1	<1
Benzo(a)pyrene TEQ	µg/L	<5	<5	<5	<5
Total +ve PAH's	µg/L	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	103	89	87	117

OCP in water - Trace level					
Our Reference:	UNITS	167400-1	167400-2	167400-3	167400-4
Your Reference	-----	SW1	SW2	SW3	SW4
	-				
Date Sampled	-----	17/05/2017	17/05/2017	17/05/2017	17/05/2017
Type of sample		Water	Water	Water	Water
Date extracted	-	23/05/2017	23/05/2017	23/05/2017	23/05/2017
Date analysed	-	25/05/2017	25/05/2017	25/05/2017	25/05/2017
HCB	µg/L	<0.001	<0.001	<0.001	<0.001
alpha-BHC	µg/L	<0.001	<0.001	<0.001	<0.001
gamma-BHC	µg/L	<0.001	<0.001	<0.001	<0.001
beta-BHC	µg/L	<0.001	<0.001	<0.001	<0.001
Heptachlor	µg/L	<0.001	<0.001	<0.001	<0.001
delta-BHC	µg/L	<0.001	<0.001	<0.001	<0.001
Aldrin	µg/L	<0.001	<0.001	<0.001	<0.001
Heptachlor Epoxide	µg/L	<0.001	<0.001	<0.001	<0.001
gamma-Chlordane	µg/L	<0.001	<0.004	<0.001	<0.004
alpha-Chlordane	µg/L	<0.001	<0.001	<0.001	<0.001
Endosulfan I	µg/L	<0.002	<0.002	<0.002	<0.002
pp-DDE	µg/L	<0.001	<0.001	<0.001	<0.001
Dieldrin	µg/L	0.001	0.003	0.003	0.002
Endrin	µg/L	<0.001	<0.001	<0.001	<0.001
pp-DDD	µg/L	<0.001	<0.001	<0.001	<0.001
Endosulfan II	µg/L	<0.002	<0.002	<0.002	<0.002
DDT	µg/L	<0.001	<0.001	<0.001	<0.001
Endosulfan Sulphate	µg/L	<0.001	<0.001	<0.001	<0.001
Methoxychlor	µg/L	<0.001	<0.001	<0.001	<0.001
Mirex	µg/L	<0.002	<0.002	<0.002	<0.002
Surrogate p-Terphenyl-d ₁₄	%	95	97	92	97

OP in water Trace ANZECCF/ADWG Our Reference: Your Reference	UNITS ----- -	167400-1 SW1	167400-2 SW2	167400-3 SW3	167400-4 SW4
Date Sampled Type of sample	----- Water	17/05/2017 Water	17/05/2017 Water	17/05/2017 Water	17/05/2017 Water
Date extracted	-	23/05/2017	23/05/2017	23/05/2017	23/05/2017
Date analysed	-	25/05/2017	25/05/2017	25/05/2017	25/05/2017
Azinphos-methyl (Guthion)	µg/L	<0.02	<0.02	<0.02	<0.02
Bromophos ethyl	µg/L	<0.01	<0.01	<0.01	<0.01
Chlorpyrifos	µg/L	<0.009	<0.009	<0.009	<0.009
Chlorpyrifos-methyl	µg/L	<0.01	<0.01	<0.01	<0.01
Diazinon	µg/L	<0.01	<0.01	<0.01	<0.01
Dichlorvos	µg/L	<0.01	<0.01	<0.01	<0.01
Dimethoate	µg/L	<0.01	<0.01	<0.01	<0.01
Ethion	µg/L	<0.01	<0.01	<0.01	<0.01
Fenitrothion	µg/L	<0.01	<0.01	<0.01	<0.01
Malathion	µg/L	<0.01	<0.01	<0.01	<0.01
Parathion	µg/L	<0.004	<0.004	<0.004	<0.004
Methyl Parathion	µg/L	<0.01	<0.01	<0.01	<0.01
Ronnel	µg/L	<0.20	<0.20	<0.20	<0.20
Surrogate <i>p</i> -Terphenyl-d ₁₄	%	95	97	92	97

PCB in water - trace level Aroclors Our Reference: Your Reference	UNITS ----- -	167400-1 SW1	167400-2 SW2	167400-3 SW3	167400-4 SW4
Date Sampled Type of sample	----- Water	17/05/2017 Water	17/05/2017 Water	17/05/2017 Water	17/05/2017 Water
Date prepared	-	23/05/2017	23/05/2017	23/05/2017	23/05/2017
Date analysed	-	25/05/2017	25/05/2017	25/05/2017	25/05/2017
Aroclor 1016	µg/L	#	<0.01	<0.01	<0.01
Aroclor 1221	µg/L	#	<0.01	<0.01	<0.01
Aroclor 1232	µg/L	#	<0.01	<0.01	<0.01
Aroclor 1242	µg/L	#	<0.01	<0.01	<0.01
Aroclor 1248	µg/L	#	<0.01	<0.01	<0.01
Aroclor 1254	µg/L	#	<0.01	<0.01	<0.01
Aroclor 1260	µg/L	#	<0.01	<0.01	<0.01
Total PCB	µg/L	0.010	<0.010	<0.010	<0.010
Surrogate p-Terphenyl-d14	%	95	97	92	97

Total Phenolics in Water					
Our Reference:	UNITS	167400-1	167400-2	167400-3	167400-4
Your Reference	-----	SW1	SW2	SW3	SW4
	-				
Date Sampled	-----	17/05/2017	17/05/2017	17/05/2017	17/05/2017
Type of sample		Water	Water	Water	Water
Date extracted	-	19/05/2017	19/05/2017	19/05/2017	19/05/2017
Date analysed	-	19/05/2017	19/05/2017	19/05/2017	19/05/2017
Total Phenolics (as Phenol)	mg/L	<0.05	<0.05	<0.05	<0.05

HM in water - dissolved						
Our Reference:	UNITS	167400-1	167400-2	167400-3	167400-4	167400-5
Your Reference	-----	SW1	SW2	SW3	SW4	BD1
	-					
Date Sampled	-----	17/05/2017	17/05/2017	17/05/2017	17/05/2017	17/05/2017
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	22/05/2017	22/05/2017	22/05/2017	22/05/2017	22/05/2017
Date analysed	-	22/05/2017	22/05/2017	22/05/2017	22/05/2017	22/05/2017
Arsenic-Dissolved	µg/L	<1	2	2	<1	<1
Cadmium-Dissolved	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium-Dissolved	µg/L	<1	<1	<1	<1	<1
Copper-Dissolved	µg/L	3	4	2	4	2
Lead-Dissolved	µg/L	<1	<1	<1	<1	<1
Manganese-Dissolved	µg/L	49	150	140	39	49
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel-Dissolved	µg/L	2	2	2	2	2
Zinc-Dissolved	µg/L	6	4	2	7	5

Metals in Waters - Total						
Our Reference:	UNITS	167400-1	167400-2	167400-3	167400-4	167400-5
Your Reference	-----	SW1	SW2	SW3	SW4	BD1
	-					
Date Sampled	-----	17/05/2017	17/05/2017	17/05/2017	17/05/2017	17/05/2017
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	23/05/2017	23/05/2017	23/05/2017	23/05/2017	23/05/2017
Date analysed	-	23/05/2017	23/05/2017	23/05/2017	23/05/2017	23/05/2017
Phosphorus - Total	mg/L	0.07	<0.05	<0.05	0.08	0.08

Miscellaneous Inorganics						
Our Reference:	UNITS	167400-1	167400-2	167400-3	167400-4	167400-5
Your Reference	-----	SW1	SW2	SW3	SW4	BD1
	-					
Date Sampled	-----	17/05/2017	17/05/2017	17/05/2017	17/05/2017	17/05/2017
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	18/05/2017	18/05/2017	18/05/2017	18/05/2017	18/05/2017
Date analysed	-	18/05/2017	18/05/2017	18/05/2017	18/05/2017	18/05/2017
Nitrate as N in water	mg/L	0.29	0.02	0.02	0.27	0.28
Nitrite as N in water	mg/L	<0.005	0.01	0.01	<0.005	<0.005
Ammonia as N in water	mg/L	0.005	0.11	0.096	0.012	<0.005

Perfluoroalkylated Substances in Waters Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- - -----	167400-1 SW1 17/05/2017 Water	167400-2 SW2 17/05/2017 Water	167400-3 SW3 17/05/2017 Water	167400-4 SW4 17/05/2017 Water
Date prepared	-	24/05/2017	24/05/2017	24/05/2017	24/05/2017
Date analysed	-	24/05/2017	24/05/2017	24/05/2017	24/05/2017
Perfluorobutanesulfonic acid	µg/L	<0.01	<0.01	<0.01	<0.01
Perfluoropentanesulfonic acid*	µg/L	<0.01	<0.01	<0.01	<0.01
Perfluorohexanesulfonic acid	µg/L	0.01	0.03	0.03	0.01
Perfluoroheptanesulfonic acid*	µg/L	<0.01	<0.01	<0.01	<0.01
Perfluorooctanesulfonic acid PFOS	µg/L	0.01	0.04	0.04	0.01
Perfluorodecanesulfonic acid	µg/L	<0.02	<0.02	<0.02	<0.02
Perfluorobutanoic acid	µg/L	<0.02	<0.02	<0.02	<0.02
Perfluoropentanoic acid*	µg/L	<0.02	0.03	0.04	<0.02
Perfluorohexanoic acid	µg/L	<0.01	0.03	0.03	<0.01
Perfluoroheptanoic acid	µg/L	<0.01	0.02	0.02	<0.01
Perfluorooctanoic acid PFOA	µg/L	<0.01	0.03	0.03	<0.01
Perfluorononanoic acid	µg/L	<0.01	<0.01	<0.01	<0.01
Perfluorodecanoic acid	µg/L	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid	µg/L	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid	µg/L	<0.05	<0.05	<0.05	<0.05
Perfluorotridecanoic acid	µg/L	<0.1	<0.1	<0.1	<0.1
Perfluorotetradecanoic acid	µg/L	<0.5	<0.5	<0.5	<0.5
4:2 FTS	µg/L	<0.01	<0.01	<0.01	<0.01
6:2 FTS	µg/L	<0.01	<0.01	<0.01	<0.01
8:2 FTS	µg/L	<0.01	<0.01	<0.01	<0.01
10:2 FTS*	µg/L	<0.01	<0.01	<0.01	<0.01
Perfluorooctane sulfonamide	µg/L	<0.1	<0.1	<0.1	<0.1
N-Methyl perfluorooctane sulfonamide	µg/L	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctanesulfon - amide	µg/L	<0.1	<0.1	<0.1	<0.1
N-Me perfluorooctanesulfonamid -oethanol	µg/L	<0.05	<0.05	<0.05	<0.05
N-Et perfluorooctanesulfonamid -oethanol	µg/L	<0.5	<0.5	<0.5	<0.5
MePerfluorooctanesulf- amid oacetic acid	µg/L	<0.02	<0.02	<0.02	<0.02
EtPerfluorooctanesulf- amid oacetic acid	µg/L	<0.02	<0.02	<0.02	<0.02
Surrogate ¹³ C ₈ PFOS	%	93	98	95	97
Surrogate ¹³ C ₂ PFOA	%	104	101	105	104

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-013	Water samples are analysed directly by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Ext-054	Analysed by MPL Envirolab
Org-012/017	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS.
Ext-020	Analysis subcontracted to Australian Government - National Measurement Institute. NATA Accreditation No: 198
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Metals-022	Determination of various metals by ICP-MS.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-020	Determination of various metals by ICP-AES.
Inorg-055	Nitrate - determined colourimetrically. Soils are analysed following a water extraction.
Inorg-055	Nitrite - determined colourimetrically based on APHA latest edition NO2- B. Soils are analysed following a water extraction.
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Soils are analysed following a KCl extraction.
Org-035	Soil samples are extracted with Methanol, evaporated and reconstituted. Waters are directly injected and/or concentrated after SPE. Analysis is undertaken with LC-MS/MS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are NOT corrected for Surrogates (mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample). Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
vTRH(C6-C10)/BTEXN in Water						Base II Duplicate II %RPD		
Date extracted	-			18/05/2017	[NT]	[NT]	LCS-W3	18/05/2017
Date analysed	-			19/05/2017	[NT]	[NT]	LCS-W3	19/05/2017
TRHC ₆ - C ₉	µg/L	10	Org-016	<10	[NT]	[NT]	LCS-W3	100%
TRHC ₆ - C ₁₀	µg/L	10	Org-016	<10	[NT]	[NT]	LCS-W3	100%
Benzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W3	94%
Toluene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W3	103%
Ethylbenzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W3	100%
m+p-xylene	µg/L	2	Org-016	<2	[NT]	[NT]	LCS-W3	101%
o-xylene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W3	99%
Naphthalene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Surrogate Dibromofluoromethane	%		Org-016	103	[NT]	[NT]	LCS-W3	101%
Surrogate toluene-d8	%		Org-016	117	[NT]	[NT]	LCS-W3	105%
Surrogate 4-BFB	%		Org-016	84	[NT]	[NT]	LCS-W3	100%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
svTRH (C10-C40) in Water						Base II Duplicate II %RPD		
Date extracted	-			23/05/2017	[NT]	[NT]	LCS-W1	23/05/2017
Date analysed	-			23/05/2017	[NT]	[NT]	LCS-W1	23/05/2017
TRHC ₁₀ - C ₁₄	µg/L	50	Org-003	<50	[NT]	[NT]	[NR]	[NR]
TRHC ₁₅ - C ₂₈	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	106%
TRHC ₂₉ - C ₃₆	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	104%
TRH>C ₁₀ - C ₁₆	µg/L	50	Org-003	<50	[NT]	[NT]	[NR]	[NR]
TRH>C ₁₆ - C ₃₄	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	106%
TRH>C ₃₄ - C ₄₀	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	104%
Surrogate o-Terphenyl	%		Org-003	85	[NT]	[NT]	LCS-W1	91%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Water						Base II Duplicate II %RPD		
Date extracted	-			23/05/2017	[NT]	[NT]	LCS-W2	23/05/2017
Date analysed	-			24/05/2017	[NT]	[NT]	LCS-W2	24/05/2017
Naphthalene	µg/L	1	Org-012	<1	[NT]	[NT]	LCS-W2	70%
Acenaphthylene	µg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	µg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]
Fluorene	µg/L	1	Org-012	<1	[NT]	[NT]	LCS-W2	81%
Phenanthrene	µg/L	1	Org-012	<1	[NT]	[NT]	LCS-W2	85%
Anthracene	µg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	µg/L	1	Org-012	<1	[NT]	[NT]	LCS-W2	89%
Pyrene	µg/L	1	Org-012	<1	[NT]	[NT]	LCS-W2	87%
Benzo(a)anthracene	µg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]

Client Reference: 71459.09, Prop Residential Development, Moorebank

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Water						Base II Duplicate II %RPD		
Chrysene	µg/L	1	Org-012	<1	[NT]	[NT]	LCS-W2	83%
Benzo(b,j +k)fluoranthene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	µg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]
Indeno(1,2,3-c,d)pyrene	µg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	µg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	µg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012	113	[NT]	[NT]	LCS-W2	125%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results		
OCP in water - Trace level						Base II Duplicate II %RPD		
Date extracted	-			23/05/2017	167400-1	23/05/2017 23/05/2017		
Date analysed	-			25/05/2017	167400-1	25/05/2017 25/05/2017		
HCB	µg/L	0.001	Org-005	<0.001	167400-1	<0.001 <0.001		
alpha-BHC	µg/L	0.001	Org-005	<0.001	167400-1	<0.001 <0.001		
gamma-BHC	µg/L	0.001	Org-005	<0.001	167400-1	<0.001 <0.001		
beta-BHC	µg/L	0.001	Org-005	<0.001	167400-1	<0.001 <0.001		
Heptachlor	µg/L	0.001	Org-005	<0.001	167400-1	<0.001 <0.001		
delta-BHC	µg/L	0.001	Org-005	<0.001	167400-1	<0.001 <0.001		
Aldrin	µg/L	0.001	Org-005	<0.001	167400-1	<0.001 <0.001		
Heptachlor Epoxide	µg/L	0.001	Org-005	<0.001	167400-1	<0.001 <0.001		
gamma-Chlordane	µg/L	0.001	Org-005	<0.001	167400-1	<0.001 <0.001		
alpha-Chlordane	µg/L	0.001	Org-005	<0.001	167400-1	<0.001 <0.001		
Endosulfan I	µg/L	0.002	Org-005	<0.002	167400-1	<0.002 <0.002		
pp-DDE	µg/L	0.001	Org-005	<0.001	167400-1	<0.001 <0.001		
Dieldrin	µg/L	0.001	Org-005	<0.001	167400-1	0.001 0.001 RPD: 0		
Endrin	µg/L	0.001	Org-005	<0.001	167400-1	<0.001 <0.001		
pp-DDD	µg/L	0.001	Org-005	<0.001	167400-1	<0.001 <0.001		
Endosulfan II	µg/L	0.002	Org-005	<0.002	167400-1	<0.002 <0.002		
DDT	µg/L	0.001	Org-005	<0.001	167400-1	<0.001 <0.001		
Endosulfan Sulphate	µg/L	0.001	Org-005	<0.001	167400-1	<0.001 <0.001		
Methoxychlor	µg/L	0.001	Org-005	<0.001	167400-1	<0.001 <0.001		
Mirex	µg/L	0.002	Org-012	<0.002	167400-1	<0.002 <0.002		
Surrogate p-Terphenyl-d14	%		Org-012	113	167400-1	95 103 RPD: 8		

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results
OP in water Trace ANZECCF/ADWG						Base Duplicate %RPD
Date extracted	-			23/05/2017	167400-1	23/05/2017 23/05/2017
Date analysed	-			25/05/2017	167400-1	25/05/2017 25/05/2017
Azinphos-methyl (Guthion)	µg/L	0.01	Ext-054	<0.01	167400-1	<0.02 <0.01
Bromophos ethyl	µg/L	0.01	Ext-054	<0.01	167400-1	<0.01 <0.01
Chlorpyrifos	µg/L	0.009	Ext-054	<0.009	167400-1	<0.009 <0.009
Chlorpyrifos-methyl	µg/L	0.01	Ext-054	<0.01	167400-1	<0.01 <0.01
Diazinon	µg/L	0.01	Ext-054	<0.01	167400-1	<0.01 <0.01
Dichlorvos	µg/L	0.01	Ext-054	<0.01	167400-1	<0.01 <0.01
Dimethoate	µg/L	0.01	Ext-054	<0.01	167400-1	<0.01 <0.01
Ethion	µg/L	0.01	Ext-054	<0.01	167400-1	<0.01 <0.01
Fenitrothion	µg/L	0.01	Ext-054	<0.01	167400-1	<0.01 <0.01
Malathion	µg/L	0.01	Ext-054	<0.01	167400-1	<0.01 <0.01
Parathion	µg/L	0.004	Ext-054	<0.004	167400-1	<0.004 <0.004
Methyl Parathion	µg/L	0.01	Ext-054	<0.01	167400-1	<0.01 <0.01
Ronnel	µg/L	0.2	Ext-054	<0.20	167400-1	<0.20 <0.20
Surrogate p-Terphenyl- d14	%		Ext-054	113	167400-1	95 103 RPD: 8
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results
PCB in water - trace level Aroclors						Base Duplicate %RPD
Date prepared	-			23/05/2017	167400-1	23/05/2017 23/05/2017
Date analysed	-			25/05/2017	167400-1	25/05/2017 25/05/2017
Aroclor 1016	µg/L	0.01	Org-012/017	<0.01	167400-1	# #
Aroclor 1221	µg/L	0.01	Org-012/017	<0.01	167400-1	# #
Aroclor 1232	µg/L	0.01	Org-012/017	<0.01	167400-1	# #
Aroclor 1242	µg/L	0.01	Org-012/017	<0.01	167400-1	# #
Aroclor 1248	µg/L	0.01	Org-012/017	<0.01	167400-1	# #
Aroclor 1254	µg/L	0.01	Org-012/017	<0.01	167400-1	# #
Aroclor 1260	µg/L	0.01	Org-012/017	<0.01	167400-1	# #
Total PCB	µg/L	0.01	Ext-020	<0.010	167400-1	0.010 0.020 RPD: 67
Surrogate p-Terphenyl- d14	%		Ext-054	113	167400-1	95 103 RPD: 8

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QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Total Phenolics in Water						Base II Duplicate II %RPD		
Date extracted	-			19/05/2017	167400-1	19/05/2017 19/05/2017	LCS-W3	19/05/2017
Date analysed	-			19/05/2017	167400-1	19/05/2017 19/05/2017	LCS-W3	19/05/2017
Total Phenolics (as Phenol)	mg/L	0.05	Inorg-031	<0.05	167400-1	<0.05 <0.05	LCS-W3	97%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
HM in water - dissolved						Base II Duplicate II %RPD		
Date prepared	-			22/05/2017	167400-1	22/05/2017 22/05/2017	LCS-W2	22/05/2017
Date analysed	-			22/05/2017	167400-1	22/05/2017 22/05/2017	LCS-W2	22/05/2017
Arsenic-Dissolved	µg/L	1	Metals-022	<1	167400-1	<1 [N/T]	LCS-W2	98%
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	167400-1	<0.1 [N/T]	LCS-W2	101%
Chromium-Dissolved	µg/L	1	Metals-022	<1	167400-1	<1 [N/T]	LCS-W2	94%
Copper-Dissolved	µg/L	1	Metals-022	<1	167400-1	3 [N/T]	LCS-W2	91%
Lead-Dissolved	µg/L	1	Metals-022	<1	167400-1	<1 [N/T]	LCS-W2	97%
Manganese-Dissolved	µg/L	5	Metals-022	<5	167400-1	49 [N/T]	LCS-W2	93%
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	167400-1	<0.05 <0.05	[NR]	[NR]
Nickel-Dissolved	µg/L	1	Metals-022	<1	167400-1	2 [N/T]	LCS-W2	95%
Zinc-Dissolved	µg/L	1	Metals-022	<1	167400-1	6 [N/T]	LCS-W2	94%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Metals in Waters - Total						Base II Duplicate II %RPD		
Date prepared	-			23/05/2017	[NT]	[NT]	LCS-W1	23/05/2017
Date analysed	-			23/05/2017	[NT]	[NT]	LCS-W1	23/05/2017
Phosphorus - Total	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	LCS-W1	108%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Miscellaneous Inorganics						Base II Duplicate II %RPD		
Date prepared	-			18/05/2017	[NT]	[NT]	LCS-W3	18/05/2017
Date analysed	-			18/05/2017	[NT]	[NT]	LCS-W3	18/05/2017
Nitrate as N in water	mg/L	0.005	Inorg-055	<0.005	[NT]	[NT]	LCS-W3	96%
Nitrite as N in water	mg/L	0.005	Inorg-055	<0.005	[NT]	[NT]	LCS-W3	106%
Ammonia as N in water	mg/L	0.005	Inorg-057	<0.005	[NT]	[NT]	LCS-W3	108%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Perfluoroalkylated Substances in Waters						Base Duplicate %RPD		
Date prepared	-			24/05/2017	167400-1	24/05/2017 24/05/2017	LCS-W3	24/05/2017
Date analysed	-			24/05/2017	167400-1	24/05/2017 24/05/2017	LCS-W3	24/05/2017
Perfluorobutanesulfonic acid	µg/L	0.01	Org-035	<0.01	167400-1	<0.01 <0.01	LCS-W3	96%
Perfluoropentanesulfonic acid*	µg/L	0.01	Org-035	<0.01	167400-1	<0.01 <0.01	LCS-W3	94%
Perfluorohexanesulfonic acid	µg/L	0.01	Org-035	<0.01	167400-1	0.01 0.02 RPD: 67	LCS-W3	101%
Perfluoroheptanesulfonic acid*	µg/L	0.01	Org-035	<0.01	167400-1	<0.01 <0.01	LCS-W3	85%
Perfluorooctanesulfonic acid PFOS	µg/L	0.01	Org-035	<0.01	167400-1	0.01 0.01 RPD: 0	LCS-W3	102%
Perfluorodecanesulfonic acid	µg/L	0.02	Org-035	<0.02	167400-1	<0.02 <0.02	LCS-W3	97%
Perfluorobutanoic acid	µg/L	0.02	Org-035	<0.02	167400-1	<0.02 <0.02	LCS-W3	97%
Perfluoropentanoic acid*	µg/L	0.02	Org-035	<0.02	167400-1	<0.02 <0.02	LCS-W3	100%
Perfluorohexanoic acid	µg/L	0.01	Org-035	<0.01	167400-1	<0.01 <0.01	LCS-W3	101%
Perfluoroheptanoic acid	µg/L	0.01	Org-035	<0.01	167400-1	<0.01 <0.01	LCS-W3	109%
Perfluorooctanoic acid PFOA	µg/L	0.01	Org-035	<0.01	167400-1	<0.01 <0.01	LCS-W3	100%
Perfluorononanoic acid	µg/L	0.01	Org-035	<0.01	167400-1	<0.01 <0.01	LCS-W3	100%
Perfluorodecanoic acid	µg/L	0.02	Org-035	<0.02	167400-1	<0.02 <0.02	LCS-W3	100%
Perfluoroundecanoic acid	µg/L	0.02	Org-035	<0.02	167400-1	<0.02 <0.02	LCS-W3	101%
Perfluorododecanoic acid	µg/L	0.05	Org-035	<0.05	167400-1	<0.05 <0.05	LCS-W3	95%
Perfluorotridecanoic acid	µg/L	0.1	Org-035	<0.1	167400-1	<0.1 <0.1	LCS-W3	111%
Perfluorotetradecanoic acid	µg/L	0.5	Org-035	<0.5	167400-1	<0.5 <0.5	LCS-W3	126%
4:2 FTS	µg/L	0.01	Org-035	<0.01	167400-1	<0.01 <0.01	LCS-W3	107%
6:2 FTS	µg/L	0.01	Org-035	<0.01	167400-1	<0.01 <0.01	LCS-W3	110%
8:2 FTS	µg/L	0.01	Org-035	<0.01	167400-1	<0.01 <0.01	LCS-W3	122%
10:2 FTS*	µg/L	0.01	Org-035	<0.01	167400-1	<0.01 <0.01	LCS-W3	105%
Perfluorooctane sulfonamide	µg/L	0.1	Org-035	<0.1	167400-1	<0.1 <0.1	LCS-W3	106%
N-Methyl perfluorooctane sulfonamide	µg/L	0.05	Org-035	<0.05	167400-1	<0.05 <0.05	LCS-W3	95%
N-Ethyl perfluorooctanesulfonamide	µg/L	0.1	Org-035	<0.1	167400-1	<0.1 <0.1	LCS-W3	81%
N-Me perfluorooctanesulfonamide -oethanol	µg/L	0.05	Org-035	<0.05	167400-1	<0.05 <0.05	LCS-W3	95%
N-Et perfluorooctanesulfonamide -oethanol	µg/L	0.5	Org-035	<0.5	167400-1	<0.5 <0.5	LCS-W3	116%
MePerfluorooctanesulfonamide acetic acid	µg/L	0.02	Org-035	<0.02	167400-1	<0.02 <0.02	LCS-W3	99%

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QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Perfluoroalkylated Substances in Waters						Base Duplicate %RPD		
EtPerfluorooctanesulf- amid oacetic acid	µg/L	0.02	Org-035	<0.02	167400-1	<0.02 <0.02	LCS-W3	93%
Surrogate ¹³ C ₈ PFOS	%		Org-035	102	167400-1	93 100 RPD: 7	LCS-W3	98%
Surrogate ¹³ C ₂ PFOA	%		Org-035	104	167400-1	104 103 RPD: 1	LCS-W3	103%
QUALITY CONTROL svTRH (C10-C40) in Water	UNITS	Dup. Sm#		Duplicate Base + Duplicate + %RPD		Spike Sm#	Spike % Recovery	
Date extracted	-	[NT]		[NT]		167400-3	23/05/2017	
Date analysed	-	[NT]		[NT]		167400-3	23/05/2017	
TRHC ₁₀ - C ₁₄	µg/L	[NT]		[NT]		167400-3	106%	
TRHC ₁₅ - C ₂₈	µg/L	[NT]		[NT]		167400-3	92%	
TRHC ₂₉ - C ₃₆	µg/L	[NT]		[NT]		167400-3	83%	
TRH>C ₁₀ - C ₁₆	µg/L	[NT]		[NT]		167400-3	106%	
TRH>C ₁₆ - C ₃₄	µg/L	[NT]		[NT]		167400-3	82%	
TRH>C ₃₄ - C ₄₀	µg/L	[NT]		[NT]		167400-3	83%	
Surrogate o-Terphenyl	%	[NT]		[NT]		167400-3	85%	
QUALITY CONTROL PAHs in Water	UNITS	Dup. Sm#		Duplicate Base + Duplicate + %RPD				
Date extracted	-	167400-2		23/05/2017 23/05/2017				
Date analysed	-	167400-2		24/05/2017 24/05/2017				
Naphthalene	µg/L	167400-2		<1 <1				
Acenaphthylene	µg/L	167400-2		<1 <1				
Acenaphthene	µg/L	167400-2		<1 <1				
Fluorene	µg/L	167400-2		<1 <1				
Phenanthrene	µg/L	167400-2		<1 <1				
Anthracene	µg/L	167400-2		<1 <1				
Fluoranthene	µg/L	167400-2		<1 <1				
Pyrene	µg/L	167400-2		<1 <1				
Benzo(a)anthracene	µg/L	167400-2		<1 <1				
Chrysene	µg/L	167400-2		<1 <1				
Benzo(b,j+k)fluoranthene	µg/L	167400-2		<2 <2				
Benzo(a)pyrene	µg/L	167400-2		<1 <1				
Indeno(1,2,3-c,d)pyrene	µg/L	167400-2		<1 <1				
Dibenzo(a,h)anthracene	µg/L	167400-2		<1 <1				
Benzo(g,h,i)perylene	µg/L	167400-2		<1 <1				
Surrogate p-Terphenyl-d14	%	167400-2		89 115 RPD: 25				

QUALITY CONTROL OCP in water - Trace level	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	167400-2	23/05/2017
Date analysed	-	[NT]	[NT]	167400-2	25/05/2017
HCB	µg/L	[NT]	[NT]	[NR]	[NR]
alpha-BHC	µg/L	[NT]	[NT]	167400-2	100%
gamma-BHC	µg/L	[NT]	[NT]	[NR]	[NR]
beta-BHC	µg/L	[NT]	[NT]	167400-2	96%
Heptachlor	µg/L	[NT]	[NT]	167400-2	99%
delta-BHC	µg/L	[NT]	[NT]	[NR]	[NR]
Aldrin	µg/L	[NT]	[NT]	167400-2	113%
Heptachlor Epoxide	µg/L	[NT]	[NT]	167400-2	84%
gamma-Chlordane	µg/L	[NT]	[NT]	[NR]	[NR]
alpha-Chlordane	µg/L	[NT]	[NT]	[NR]	[NR]
Endosulfan I	µg/L	[NT]	[NT]	[NR]	[NR]
pp-DDE	µg/L	[NT]	[NT]	167400-2	71%
Dieldrin	µg/L	[NT]	[NT]	167400-2	104%
Endrin	µg/L	[NT]	[NT]	[NR]	[NR]
pp-DDD	µg/L	[NT]	[NT]	[NR]	[NR]
Endosulfan II	µg/L	[NT]	[NT]	167400-2	84%
DDT	µg/L	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	µg/L	[NT]	[NT]	167400-2	84%
Methoxychlor	µg/L	[NT]	[NT]	[NR]	[NR]
Mirex	µg/L	[NT]	[NT]	[NR]	[NR]
Surrogate <i>p</i> -Terphenyl- d ₁₄	%	[NT]	[NT]	167400-2	93%

QUALITY CONTROL OP in water Trace ANZECCF/ADWG	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	167400-2	23/05/2017
Date analysed	-	[NT]	[NT]	167400-2	25/05/2017
Azinphos-methyl (Guthion)	µg/L	[NT]	[NT]	[NR]	[NR]
Bromophos ethyl	µg/L	[NT]	[NT]	[NR]	[NR]
Chlorpyrifos	µg/L	[NT]	[NT]	167400-2	90%
Chlorpyrifos-methyl	µg/L	[NT]	[NT]	167400-2	100%
Diazinon	µg/L	[NT]	[NT]	[NR]	[NR]
Dichlorovos	µg/L	[NT]	[NT]	[NR]	[NR]
Dimethoate	µg/L	[NT]	[NT]	[NR]	[NR]
Ethion	µg/L	[NT]	[NT]	167400-2	92%
Fenitrothion	µg/L	[NT]	[NT]	167400-2	96%
Malathion	µg/L	[NT]	[NT]	[NR]	[NR]
Parathion	µg/L	[NT]	[NT]	[NR]	[NR]
Methyl Parathion	µg/L	[NT]	[NT]	[NR]	[NR]
Ronnel	µg/L	[NT]	[NT]	[NR]	[NR]
Surrogate <i>p</i> -Terphenyl- d ₁₄	%	[NT]	[NT]	167400-2	93%
QUALITY CONTROL PCB in water - trace level Aroclors	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	[NT]	[NT]	167400-2	23/05/2017
Date analysed	-	[NT]	[NT]	167400-2	25/05/2017
Aroclor 1016	µg/L	[NT]	[NT]	[NR]	[NR]
Aroclor 1221	µg/L	[NT]	[NT]	[NR]	[NR]
Aroclor 1232	µg/L	[NT]	[NT]	[NR]	[NR]
Aroclor 1242	µg/L	[NT]	[NT]	[NR]	[NR]
Aroclor 1248	µg/L	[NT]	[NT]	[NR]	[NR]
Aroclor 1254	µg/L	[NT]	[NT]	167400-2	77%
Aroclor 1260	µg/L	[NT]	[NT]	[NR]	[NR]
Total PCB	µg/L	[NT]	[NT]	[NR]	[NR]
Surrogate <i>p</i> -Terphenyl-d ₁₄	%	[NT]	[NT]	167400-2	93%

QUALITY CONTROL HM in water - dissolved	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	[NT]	[NT]	167400-2	22/05/2017
Date analysed	-	[NT]	[NT]	167400-2	22/05/2017
Arsenic-Dissolved	µg/L	[NT]	[NT]	[NR]	[NR]
Cadmium-Dissolved	µg/L	[NT]	[NT]	[NR]	[NR]
Chromium-Dissolved	µg/L	[NT]	[NT]	[NR]	[NR]
Copper-Dissolved	µg/L	[NT]	[NT]	[NR]	[NR]
Lead-Dissolved	µg/L	[NT]	[NT]	[NR]	[NR]
Manganese-Dissolved	µg/L	[NT]	[NT]	[NR]	[NR]
Mercury-Dissolved	µg/L	[NT]	[NT]	167400-2	108%
Nickel-Dissolved	µg/L	[NT]	[NT]	[NR]	[NR]
Zinc-Dissolved	µg/L	[NT]	[NT]	[NR]	[NR]
QUALITY CONTROL Perfluoroalkylated Substances in Waters	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	[NT]	[NT]	167400-2	24/05/2017
Date analysed	-	[NT]	[NT]	167400-2	24/05/2017
Perfluorobutanesulfonic acid	µg/L	[NT]	[NT]	167400-2	99%
Perfluoropentanesulfonic acid*	µg/L	[NT]	[NT]	167400-2	101%
Perfluorohexanesulfonic acid	µg/L	[NT]	[NT]	167400-2	101%
Perfluoroheptanesulfonic acid*	µg/L	[NT]	[NT]	167400-2	111%
Perfluorooctanesulfonic acid PFOS	µg/L	[NT]	[NT]	167400-2	105%
Perfluorodecanesulfonic acid	µg/L	[NT]	[NT]	167400-2	95%
Perfluorobutanoic acid	µg/L	[NT]	[NT]	167400-2	101%
Perfluoropentanoic acid*	µg/L	[NT]	[NT]	167400-2	96%
Perfluorohexanoic acid	µg/L	[NT]	[NT]	167400-2	103%
Perfluoroheptanoic acid	µg/L	[NT]	[NT]	167400-2	102%
Perfluorooctanoic acid PFOA	µg/L	[NT]	[NT]	167400-2	105%
Perfluorononanoic acid	µg/L	[NT]	[NT]	167400-2	94%
Perfluorodecanoic acid	µg/L	[NT]	[NT]	167400-2	98%
Perfluoroundecanoic acid	µg/L	[NT]	[NT]	167400-2	105%
Perfluorododecanoic acid	µg/L	[NT]	[NT]	167400-2	92%
Perfluorotridecanoic acid	µg/L	[NT]	[NT]	167400-2	70%
Perfluorotetradecanoic acid	µg/L	[NT]	[NT]	167400-2	83%
4:2 FTS	µg/L	[NT]	[NT]	167400-2	98%
6:2 FTS	µg/L	[NT]	[NT]	167400-2	103%
8:2 FTS	µg/L	[NT]	[NT]	167400-2	96%
10:2 FTS*	µg/L	[NT]	[NT]	167400-2	68%

QUALITY CONTROL Perfluoroalkylated Substances in Waters	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Perfluorooctane sulfonamide	µg/L	[NT]	[NT]	167400-2	104%
N-Methyl perfluorooctane sulfonamide	µg/L	[NT]	[NT]	167400-2	100%
N-Ethyl perfluorooctanesulfon - amide	µg/L	[NT]	[NT]	167400-2	84%
N-Me perfluorooctanesulfonamid -oethanol	µg/L	[NT]	[NT]	167400-2	85%
N-Et perfluorooctanesulfonamid -oethanol	µg/L	[NT]	[NT]	167400-2	120%
MePerfluorooctanesulf- amid oacetic acid	µg/L	[NT]	[NT]	167400-2	71%
EtPerfluorooctanesulf- amid oacetic acid	µg/L	[NT]	[NT]	167400-2	113%
Surrogate ¹³ C ₈ PFOS	%	[NT]	[NT]	167400-2	98%
Surrogate ¹³ C ₂ PFOA	%	[NT]	[NT]	167400-2	105%
QUALITY CONTROL OCP in water - Trace level	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	LCS-1	23/05/2017
Date analysed	-	[NT]	[NT]	LCS-1	25/05/2017
HCB	µg/L	[NT]	[NT]	[NR]	[NR]
alpha-BHC	µg/L	[NT]	[NT]	LCS-1	131%
gamma-BHC	µg/L	[NT]	[NT]	[NR]	[NR]
beta-BHC	µg/L	[NT]	[NT]	LCS-1	131%
Heptachlor	µg/L	[NT]	[NT]	LCS-1	102%
delta-BHC	µg/L	[NT]	[NT]	[NR]	[NR]
Aldrin	µg/L	[NT]	[NT]	LCS-1	101%
Heptachlor Epoxide	µg/L	[NT]	[NT]	LCS-1	106%
gamma-Chlordane	µg/L	[NT]	[NT]	[NR]	[NR]
alpha-Chlordane	µg/L	[NT]	[NT]	[NR]	[NR]
Endosulfan I	µg/L	[NT]	[NT]	[NR]	[NR]
pp-DDE	µg/L	[NT]	[NT]	LCS-1	122%
Dieldrin	µg/L	[NT]	[NT]	LCS-1	114%
Endrin	µg/L	[NT]	[NT]	[NR]	[NR]
pp-DDD	µg/L	[NT]	[NT]	LCS-1	124%
Endosulfan II	µg/L	[NT]	[NT]	[NR]	[NR]
DDT	µg/L	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	µg/L	[NT]	[NT]	LCS-1	119%
Methoxychlor	µg/L	[NT]	[NT]	[NR]	[NR]
Mirex	µg/L	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl- d ₁₄	%	[NT]	[NT]	LCS-1	118%

QUALITY CONTROL OP in water Trace ANZECCF/ADWG	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	LCS-1	23/05/2017
Date analysed	-	[NT]	[NT]	LCS-1	25/05/2017
Azinphos-methyl (Guthion)	µg/L	[NT]	[NT]	[NR]	[NR]
Bromophos ethyl	µg/L	[NT]	[NT]	[NR]	[NR]
Chlorpyrifos	µg/L	[NT]	[NT]	LCS-1	117%
Chlorpyrifos-methyl	µg/L	[NT]	[NT]	LCS-1	119%
Diazinon	µg/L	[NT]	[NT]	[NR]	[NR]
Dichlorovos	µg/L	[NT]	[NT]	[NR]	[NR]
Dimethoate	µg/L	[NT]	[NT]	[NR]	[NR]
Ethion	µg/L	[NT]	[NT]	LCS-1	117%
Fenitrothion	µg/L	[NT]	[NT]	LCS-1	104%
Malathion	µg/L	[NT]	[NT]	[NR]	[NR]
Parathion	µg/L	[NT]	[NT]	[NR]	[NR]
Methyl Parathion	µg/L	[NT]	[NT]	[NR]	[NR]
Ronnel	µg/L	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	[NT]	[NT]	LCS-1	118%
QUALITY CONTROL PCB in water - trace level Aroclors	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	[NT]	[NT]	LCS-1	23/05/2017
Date analysed	-	[NT]	[NT]	LCS-1	25/05/2017
Aroclor 1016	µg/L	[NT]	[NT]	[NR]	[NR]
Aroclor 1221	µg/L	[NT]	[NT]	[NR]	[NR]
Aroclor 1232	µg/L	[NT]	[NT]	[NR]	[NR]
Aroclor 1242	µg/L	[NT]	[NT]	[NR]	[NR]
Aroclor 1248	µg/L	[NT]	[NT]	[NR]	[NR]
Aroclor 1254	µg/L	[NT]	[NT]	LCS-1	106%
Aroclor 1260	µg/L	[NT]	[NT]	[NR]	[NR]
Total PCB	µg/L	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	[NT]	[NT]	LCS-1	118%

Report Comments:

OC/OP/PCB's in water analysed by MPL Laboratories. Report No.196013.

Total PCB aroclors determined by the sum of PCB congeners.

#Unable to determine aroclor type at trace levels.

Asbestos ID was analysed by Approved Identifier:

Not applicable for this job

Asbestos ID was authorised by Approved Signatory:

Not applicable for this job

INS: Insufficient sample for this test

PQL: Practical Quantitation Limit

NT: Not tested

NR: Test not required

RPD: Relative Percent Difference

NA: Test not required

<: Less than

>: Greater than

LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.



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Envirolab Services Pty Ltd - Sydney | ABN 37 112 535 645

CERTIFICATE OF ANALYSIS

172072

Client:

Douglas Partners Pty Ltd
96 Hermitage Rd
West Ryde
NSW 2114

Attention: John Russell, Chris Bagia

Sample log in details:

Your Reference:	71459.09, Prop Residential Development, Moorebank
No. of samples:	7 Waters
Date samples received / completed instructions received	25/07/17 / 25/07/17

Analysis Details:

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date: 1/08/17 / 31/07/17
Date of Preliminary Report: Not Issued

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Results Approved By:

David Springer
General Manager



Envirolab Reference: 172072
Revision No: R 00

Miscellaneous Inorganics Our Reference: Your Reference	UNITS ----- -	172072-1 SW1	172072-2 SW2	172072-3 SW2	172072-4 SW3	172072-5 SW3
Depth	-----	-	0.5	1.0	0.5	1.0
Date Sampled		25/07/2017	25/07/2017	25/07/2017	25/07/2017	25/07/2017
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	25/07/2017	25/07/2017	25/07/2017	25/07/2017	25/07/2017
Date analysed	-	25/07/2017	25/07/2017	25/07/2017	25/07/2017	25/07/2017
Ammonia as N in water	mg/L	<0.005	0.16	0.14	0.11	0.10

Miscellaneous Inorganics Our Reference: Your Reference	UNITS ----- -	172072-6 SW4	172072-7 BD1
Depth	-----	-	-
Date Sampled		25/07/2017	25/07/2017
Type of sample		Water	Water
Date prepared	-	25/07/2017	25/07/2017
Date analysed	-	25/07/2017	25/07/2017
Ammonia as N in water	mg/L	<0.005	<0.005

Method ID	Methodology Summary
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Soils are analysed following a KCl extraction.

Client Reference: 71459.09, Prop Residential Development, Moorebank

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Miscellaneous Inorganics						Base Duplicate %RPD		
Date prepared	-			25/07/2017	172072-1	25/07/2017 25/07/2017	LCS-W1	25/07/2017
Date analysed	-			25/07/2017	172072-1	25/07/2017 25/07/2017	LCS-W1	25/07/2017
Ammonia as N in water	mg/L	0.005	Inorg-057	<0.005	172072-1	<0.005 <0.005	LCS-W1	102%
QUALITY CONTROL	UNITS	Dup. Sm#		Duplicate		Spike Sm#	Spike % Recovery	
Miscellaneous Inorganics				Base + Duplicate + %RPD				
Date prepared	-	[NT]		[NT]		172072-2	25/07/2017	
Date analysed	-	[NT]		[NT]		172072-2	25/07/2017	
Ammonia as N in water	mg/L	[NT]		[NT]		172072-2	91%	

Report Comments:

Asbestos ID was analysed by Approved Identifier:	Not applicable for this job
Asbestos ID was authorised by Approved Signatory:	Not applicable for this job

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NR: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

CERTIFICATE OF ANALYSIS 182075

Client Details

Client	Douglas Partners Pty Ltd
Attention	John Russell, Jack Snowden
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	<u>71459.09, Moorebank</u>
Number of Samples	4 Water
Date samples received	14/12/2017
Date completed instructions received	14/12/2017

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
 Samples were analysed as received from the client. Results relate specifically to the samples as received.
 Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	21/12/2017
Date of Issue	18/12/2017
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Results Approved By

Nick Sarlamis, Inorganics Supervisor

Authorised By



David Springer, General Manager

Miscellaneous Inorganics					
Our Reference		182075-1	182075-2	182075-3	182075-4
Your Reference	UNITS	SW1	SW2	SW3	SW4
Date Sampled		13/12/2017	13/12/2017	13/12/2017	13/12/2017
Type of sample		Water	Water	Water	Water
Date prepared	-	14/12/2017	14/12/2017	14/12/2017	14/12/2017
Date analysed	-	14/12/2017	14/12/2017	14/12/2017	14/12/2017
Ammonia as N in water	mg/L	0.030	0.040	0.21	0.029

Method ID	Methodology Summary
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Soils are analysed following a KCl extraction.

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	182075-2
Date prepared	-			14/12/2017	1	14/12/2017	14/12/2017		14/12/2017	14/12/2017
Date analysed	-			14/12/2017	1	14/12/2017	14/12/2017		14/12/2017	14/12/2017
Ammonia as N in water	mg/L	0.005	Inorg-057	<0.005	1	0.030	0.028	7	90	90

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

CERTIFICATE OF ANALYSIS 184133

Client Details

Client	Douglas Partners Pty Ltd
Attention	Celine Li, John Russell
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	<u>71459.09, Moorebank</u>
Number of Samples	7 water
Date samples received	30/01/2018
Date completed instructions received	30/01/2018

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
 Samples were analysed as received from the client. Results relate specifically to the samples as received.
 Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	07/02/2018
Date of Issue	07/02/2018
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Results Approved By

Jaimie Loa-Kum-Cheung, Senior Chemist
 Jeremy Faircloth, Organics Supervisor
 Long Pham, Team Leader, Metals
 Nancy Zhang, Assistant Lab Manager
 Nick Sarlamis, Inorganics Supervisor
 Steven Luong, Senior Chemist

Authorised By



David Springer, General Manager

vTRH(C6-C10)/BTEXN in Water

Our Reference		184133-1	184133-2	184133-3	184133-4	184133-6
Your Reference	UNITS	SW1	SW2	SW3	SW4	TRIP SPIKE
Date Sampled		30/01/2018	30/01/2018	30/01/2018	30/01/2018	30/01/2018
Type of sample		water	water	water	water	water
Date extracted	-	01/02/2018	01/02/2018	01/02/2018	01/02/2018	01/02/2018
Date analysed	-	02/02/2018	02/02/2018	02/02/2018	02/02/2018	02/02/2018
TRH C ₆ - C ₉	µg/L	<10	<10	<10	<10	[NA]
TRH C ₆ - C ₁₀	µg/L	<10	<10	<10	<10	[NA]
TRH C ₆ - C ₁₀ less BTEX (F1)	µg/L	<10	<10	<10	<10	[NA]
Benzene	µg/L	<1	<1	<1	<1	93%
Toluene	µg/L	<1	<1	<1	<1	93%
Ethylbenzene	µg/L	<1	<1	<1	<1	100%
m+p-xylene	µg/L	<2	<2	<2	<2	100%
o-xylene	µg/L	<1	<1	<1	<1	99%
Naphthalene	µg/L	<1	<1	<1	<1	[NA]
Surrogate Dibromofluoromethane	%	97	92	77	91	94
Surrogate toluene-d8	%	95	97	105	99	97
Surrogate 4-BFB	%	105	103	103	105	104

vTRH(C6-C10)/BTEXN in Water

Our Reference		184133-7
Your Reference	UNITS	TRIP BLANK
Date Sampled		30/01/2018
Type of sample		water
Date extracted	-	01/02/2018
Date analysed	-	02/02/2018
TRH C ₆ - C ₉	µg/L	<10
TRH C ₆ - C ₁₀	µg/L	<10
TRH C ₆ - C ₁₀ less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	105
Surrogate toluene-d8	%	105
Surrogate 4-BFB	%	95

svTRH (C10-C40) in Water					
Our Reference		184133-1	184133-2	184133-3	184133-4
Your Reference	UNITS	SW1	SW2	SW3	SW4
Date Sampled		30/01/2018	30/01/2018	30/01/2018	30/01/2018
Type of sample		water	water	water	water
Date extracted	-	01/02/2018	01/02/2018	01/02/2018	01/02/2018
Date analysed	-	02/02/2018	02/02/2018	02/02/2018	02/02/2018
TRH C ₁₀ - C ₁₄	µg/L	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	µg/L	<100	<100	<100	<100
TRH C ₂₉ - C ₃₆	µg/L	<100	<100	<100	<100
TRH >C ₁₀ - C ₁₆	µg/L	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	µg/L	<50	<50	<50	<50
TRH >C ₁₆ - C ₃₄	µg/L	<100	<100	<100	<100
TRH >C ₃₄ - C ₄₀	µg/L	<100	<100	<100	<100
Surrogate o-Terphenyl	%	70	69	69	78

PAHs in Water					
Our Reference		184133-1	184133-2	184133-3	184133-4
Your Reference	UNITS	SW1	SW2	SW3	SW4
Date Sampled		30/01/2018	30/01/2018	30/01/2018	30/01/2018
Type of sample		water	water	water	water
Date extracted	-	01/02/2018	01/02/2018	01/02/2018	01/02/2018
Date analysed	-	02/02/2018	02/02/2018	02/02/2018	02/02/2018
Naphthalene	µg/L	<1	<1	<1	<1
Acenaphthylene	µg/L	<1	<1	<1	<1
Acenaphthene	µg/L	<1	<1	<1	<1
Fluorene	µg/L	<1	<1	<1	<1
Phenanthrene	µg/L	<1	<1	<1	<1
Anthracene	µg/L	<1	<1	<1	<1
Fluoranthene	µg/L	<1	<1	<1	<1
Pyrene	µg/L	<1	<1	<1	<1
Benzo(a)anthracene	µg/L	<1	<1	<1	<1
Chrysene	µg/L	<1	<1	<1	<1
Benzo(b,j+k)fluoranthene	µg/L	<2	<2	<2	<2
Benzo(a)pyrene	µg/L	<1	<1	<1	<1
Indeno(1,2,3-c,d)pyrene	µg/L	<1	<1	<1	<1
Dibenzo(a,h)anthracene	µg/L	<1	<1	<1	<1
Benzo(g,h,i)perylene	µg/L	<1	<1	<1	<1
Benzo(a)pyrene TEQ	µg/L	<5	<5	<5	<5
Total +ve PAH's	µg/L	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate <i>p</i> -Terphenyl-d14	%	100	97	100	108

OCP in water - Trace level					
Our Reference		184133-1	184133-2	184133-3	184133-4
Your Reference	UNITS	SW1	SW2	SW3	SW4
Date Sampled		30/01/2018	30/01/2018	30/01/2018	30/01/2018
Type of sample		water	water	water	water
Date extracted	-	06/02/2018	06/02/2018	06/02/2018	06/02/2018
Date analysed	-	06/02/2018	06/02/2018	06/02/2018	06/02/2018
HCB	µg/L	<0.001	<0.001	<0.001	<0.001
alpha-BHC	µg/L	<0.001	<0.001	<0.001	<0.001
gamma-BHC	µg/L	<0.001	<0.001	<0.001	<0.001
beta-BHC	µg/L	<0.001	<0.001	<0.001	<0.001
Heptachlor	µg/L	<0.001	<0.001	<0.001	<0.001
delta-BHC	µg/L	<0.001	<0.001	<0.001	<0.001
Aldrin	µg/L	<0.001	<0.001	<0.001	<0.001
Heptachlor Epoxide	µg/L	<0.001	<0.001	<0.001	<0.001
gamma-Chlordane	µg/L	<0.001	0.001	0.001	<0.001
alpha-Chlordane	µg/L	<0.001	0.001	0.001	<0.001
Endosulfan I	µg/L	<0.002	<0.002	<0.002	<0.002
pp-DDE	µg/L	<0.001	<0.001	<0.001	<0.001
Dieldrin	µg/L	<0.001	0.002	0.002	<0.001
Endrin	µg/L	<0.001	<0.001	<0.001	<0.001
pp-DDD	µg/L	<0.001	<0.001	<0.001	<0.001
Endosulfan II	µg/L	<0.002	<0.002	<0.002	<0.002
DDT	µg/L	<0.001	<0.001	<0.001	<0.001
Endosulfan Sulphate	µg/L	<0.001	<0.001	<0.001	<0.001
Methoxychlor	µg/L	<0.001	<0.001	<0.001	<0.001
Mirex	µg/L	<0.002	<0.002	<0.002	<0.002
Surrogate <i>p</i> -Terphenyl-d ₁₄	%	83	80	78	80

OP in water Trace ANZECCF/ADWG					
Our Reference		184133-1	184133-2	184133-3	184133-4
Your Reference	UNITS	SW1	SW2	SW3	SW4
Date Sampled		30/01/2018	30/01/2018	30/01/2018	30/01/2018
Type of sample		water	water	water	water
Date extracted	-	06/02/2018	06/02/2018	06/02/2018	06/02/2018
Date analysed	-	06/02/2018	06/02/2018	06/02/2018	06/02/2018
Azinphos-methyl (Guthion)	µg/L	<0.02	<0.02	<0.02	<0.02
Bromophos ethyl	µg/L	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos	µg/L	<0.009	<0.009	<0.009	<0.009
Chlorpyrifos-methyl	µg/L	<0.2	<0.2	<0.2	<0.2
Diazinon	µg/L	<0.01	<0.01	<0.01	<0.01
Dichlorovos	µg/L	<0.2	<0.2	<0.2	<0.2
Dimethoate	µg/L	<0.15	<0.15	<0.15	<0.15
Ethion	µg/L	<0.2	<0.2	<0.2	<0.2
Fenitrothion	µg/L	<0.2	<0.2	<0.2	<0.2
Malathion	µg/L	<0.05	<0.05	<0.05	<0.05
Parathion	µg/L	<0.004	<0.004	<0.004	<0.004
Methyl Parathion	µg/L	<0.2	<0.2	<0.2	<0.2
Ronnel	µg/L	<0.2	<0.2	<0.2	<0.2
Surrogate <i>p</i> -Terphenyl-d ₁₄	%	83	80	78	80

PCB in water - trace level Aroclors					
Our Reference		184133-1	184133-2	184133-3	184133-4
Your Reference	UNITS	SW1	SW2	SW3	SW4
Date Sampled		30/01/2018	30/01/2018	30/01/2018	30/01/2018
Type of sample		water	water	water	water
Date prepared	-	06/02/2018	06/02/2018	06/02/2018	06/02/2018
Date analysed	-	06/02/2018	06/02/2018	06/02/2018	06/02/2018
Aroclor 1016	µg/L	<0.01	<0.01	<0.01	<0.01
Aroclor 1221	µg/L	<0.01	<0.01	<0.01	<0.01
Aroclor 1232	µg/L	<0.01	<0.01	<0.01	<0.01
Aroclor 1242	µg/L	<0.01	<0.01	<0.01	<0.01
Aroclor 1248	µg/L	<0.01	<0.01	<0.01	<0.01
Aroclor 1254	µg/L	<0.01	<0.01	<0.01	<0.01
Aroclor 1260	µg/L	<0.01	<0.01	<0.01	<0.01
Surrogate <i>p</i> -Terphenyl-d14	%	83	80	78	80

Total Phenolics in Water					
Our Reference		184133-1	184133-2	184133-3	184133-4
Your Reference	UNITS	SW1	SW2	SW3	SW4
Date Sampled		30/01/2018	30/01/2018	30/01/2018	30/01/2018
Type of sample		water	water	water	water
Date extracted	-	01/02/2018	01/02/2018	01/02/2018	01/02/2018
Date analysed	-	01/02/2018	01/02/2018	01/02/2018	01/02/2018
Total Phenolics (as Phenol)	mg/L	<0.05	<0.05	<0.05	<0.05

HM in water - dissolved						
Our Reference		184133-1	184133-2	184133-3	184133-4	184133-5
Your Reference	UNITS	SW1	SW2	SW3	SW4	BD1300118
Date Sampled		30/01/2018	30/01/2018	30/01/2018	30/01/2018	30/01/2018
Type of sample		water	water	water	water	water
Date prepared	-	01/02/2018	01/02/2018	01/02/2018	01/02/2018	01/02/2018
Date analysed	-	01/02/2018	01/02/2018	01/02/2018	01/02/2018	01/02/2018
Arsenic-Dissolved	µg/L	1	4	4	<1	4
Cadmium-Dissolved	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium-Dissolved	µg/L	<1	<1	<1	<1	<1
Copper-Dissolved	µg/L	1	1	1	<1	1
Lead-Dissolved	µg/L	<1	<1	<1	<1	<1
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Manganese-Dissolved	µg/L	45	200	210	39	230
Nickel-Dissolved	µg/L	2	2	2	2	2
Zinc-Dissolved	µg/L	9	5	2	4	4

Miscellaneous Inorganics						
Our Reference		184133-1	184133-2	184133-3	184133-4	184133-5
Your Reference	UNITS	SW1	SW2	SW3	SW4	BD1300118
Date Sampled		30/01/2018	30/01/2018	30/01/2018	30/01/2018	30/01/2018
Type of sample		water	water	water	water	water
Date prepared	-	30/01/2018	30/01/2018	30/01/2018	30/01/2018	30/01/2018
Date analysed	-	30/01/2018	30/01/2018	30/01/2018	30/01/2018	30/01/2018
Nitrate as N in water	mg/L	0.04	1.3	<0.005	0.05	<0.005
Nitrite as N in water	mg/L	0.005	<0.005	<0.005	<0.005	<0.005
Ammonia as N in water	mg/L	0.007	0.014	0.033	0.008	0.039

Metals in Waters - Acid extractable						
Our Reference		184133-1	184133-2	184133-3	184133-4	184133-5
Your Reference	UNITS	SW1	SW2	SW3	SW4	BD1300118
Date Sampled		30/01/2018	30/01/2018	30/01/2018	30/01/2018	30/01/2018
Type of sample		water	water	water	water	water
Date prepared	-	01/02/2018	01/02/2018	01/02/2018	01/02/2018	01/02/2018
Date analysed	-	02/02/2018	02/02/2018	02/02/2018	02/02/2018	02/02/2018
Phosphorus - Total	mg/L	0.07	<0.05	<0.05	0.07	0.06

Method ID	Methodology Summary
Ext-054	Analysed by MPL Envirolab
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Inorg-055	Nitrate - determined colourimetrically. Soils are analysed following a water extraction.
Inorg-055	Nitrite - determined colourimetrically based on APHA latest edition NO2- B. Soils are analysed following a water extraction.
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Soils are analysed following a KCl extraction.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-022	Determination of various metals by ICP-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-012/017	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS.
Org-013	Water samples are analysed directly by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			01/02/2018	1	01/02/2018	02/02/2018		01/02/2018	[NT]
Date analysed	-			02/02/2018	1	02/02/2018	02/02/2018		02/02/2018	[NT]
TRH C ₆ - C ₉	µg/L	10	Org-016	<10	1	<10	<10	0	103	[NT]
TRH C ₆ - C ₁₀	µg/L	10	Org-016	<10	1	<10	<10	0	103	[NT]
Benzene	µg/L	1	Org-016	<1	1	<1	<1	0	101	[NT]
Toluene	µg/L	1	Org-016	<1	1	<1	<1	0	93	[NT]
Ethylbenzene	µg/L	1	Org-016	<1	1	<1	<1	0	99	[NT]
m+p-xylene	µg/L	2	Org-016	<2	1	<2	<2	0	110	[NT]
o-xylene	µg/L	1	Org-016	<1	1	<1	<1	0	107	[NT]
Naphthalene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-016	73	1	97	100	3	96	[NT]
Surrogate toluene-d8	%		Org-016	107	1	95	106	11	94	[NT]
Surrogate 4-BFB	%		Org-016	105	1	105	102	3	113	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date extracted	-			01/02/2018	[NT]	[NT]	[NT]	[NT]	01/02/2018	[NT]
Date analysed	-			02/02/2018	[NT]	[NT]	[NT]	[NT]	02/02/2018	[NT]
TRH C ₁₀ - C ₁₄	µg/L	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	114	[NT]
TRH C ₁₅ - C ₂₈	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	118	[NT]
TRH C ₂₉ - C ₃₆	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	86	[NT]
TRH >C ₁₀ - C ₁₆	µg/L	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	114	[NT]
TRH >C ₁₆ - C ₃₄	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	118	[NT]
TRH >C ₃₄ - C ₄₀	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	86	[NT]
Surrogate o-Terphenyl	%		Org-003	60	[NT]	[NT]	[NT]	[NT]	91	[NT]

QUALITY CONTROL: PAHs in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	[NT]
Date extracted	-			01/02/2018	[NT]	[NT]	[NT]	[NT]	01/02/2018	[NT]
Date analysed	-			02/02/2018	[NT]	[NT]	[NT]	[NT]	02/02/2018	[NT]
Naphthalene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	70	[NT]
Acenaphthylene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	76	[NT]
Phenanthrene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	76	[NT]
Anthracene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	83	[NT]
Pyrene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Benzo(a)anthracene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	79	[NT]
Benzo(b,j+k)fluoranthene	µg/L	2	Org-012	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	73	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate <i>p</i> -Terphenyl-d14	%		Org-012	100	[NT]	[NT]	[NT]	[NT]	109	[NT]

QUALITY CONTROL: OCP in water - Trace level					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			06/02/2018	[NT]	[NT]	[NT]	[NT]	06/02/2018	[NT]
Date analysed	-			06/02/2018	[NT]	[NT]	[NT]	[NT]	06/02/2018	[NT]
HCB	µg/L	0.001	Org-005	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-BHC	µg/L	0.001	Org-005	<0.001	[NT]	[NT]	[NT]	[NT]	92	[NT]
gamma-BHC	µg/L	0.001	Org-005	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	µg/L	0.001	Org-005	<0.001	[NT]	[NT]	[NT]	[NT]	61	[NT]
Heptachlor	µg/L	0.001	Org-005	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
delta-BHC	µg/L	0.001	Org-005	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	µg/L	0.001	Org-005	<0.001	[NT]	[NT]	[NT]	[NT]	120	[NT]
Heptachlor Epoxide	µg/L	0.001	Org-005	<0.001	[NT]	[NT]	[NT]	[NT]	96	[NT]
gamma-Chlordane	µg/L	0.001	Org-005	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-Chlordane	µg/L	0.001	Org-005	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	µg/L	0.002	Org-005	<0.002	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	µg/L	0.001	Org-005	<0.001	[NT]	[NT]	[NT]	[NT]	107	[NT]
Dieldrin	µg/L	0.001	Org-005	<0.001	[NT]	[NT]	[NT]	[NT]	101	[NT]
Endrin	µg/L	0.001	Org-005	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	µg/L	0.001	Org-005	<0.001	[NT]	[NT]	[NT]	[NT]	130	[NT]
Endosulfan II	µg/L	0.002	Org-005	<0.002	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
DDT	µg/L	0.001	Org-005	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	µg/L	0.001	Org-005	<0.001	[NT]	[NT]	[NT]	[NT]	61	[NT]
Methoxychlor	µg/L	0.001	Org-005	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Mirex	µg/L	0.002	Org-012	<0.002	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate <i>p</i> -Terphenyl-d ₁₄	%		Org-012	89	[NT]	[NT]	[NT]	[NT]	122	[NT]

QUALITY CONTROL: OP in water Trace ANZECCF/ADWG						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			06/02/2018	[NT]	[NT]	[NT]	[NT]	06/02/2018	[NT]
Date analysed	-			06/02/2018	[NT]	[NT]	[NT]	[NT]	06/02/2018	[NT]
Azinphos-methyl (Guthion)	µg/L	0.02	Ext-054	<0.02	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromophos ethyl	µg/L	0.2	Ext-054	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorpyrifos	µg/L	0.009	Ext-054	<0.009	[NT]	[NT]	[NT]	[NT]	93	[NT]
Chlorpyrifos-methyl	µg/L	0.2	Ext-054	<0.2	[NT]	[NT]	[NT]	[NT]	92	[NT]
Diazinon	µg/L	0.01	Ext-054	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dichlorovos	µg/L	0.2	Ext-054	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dimethoate	µg/L	0.15	Ext-054	<0.15	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethion	µg/L	0.2	Ext-054	<0.2	[NT]	[NT]	[NT]	[NT]	99	[NT]
Fenitrothion	µg/L	0.2	Ext-054	<0.2	[NT]	[NT]	[NT]	[NT]	63	[NT]
Malathion	µg/L	0.05	Ext-054	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Parathion	µg/L	0.004	Ext-054	<0.004	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Methyl Parathion	µg/L	0.2	Ext-054	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ronnel	µg/L	0.2	Ext-054	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate <i>p</i> -Terphenyl-d ₁₄	%		Ext-054	89	[NT]	[NT]	[NT]	[NT]	122	[NT]

QUALITY CONTROL: PCB in water - trace level Aroclors						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			06/02/2018	[NT]	[NT]	[NT]	[NT]	06/02/2018	[NT]
Date analysed	-			06/02/2018	[NT]	[NT]	[NT]	[NT]	06/02/2018	[NT]
Aroclor 1016	µg/L	0.01	Org-012/017	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	µg/L	0.01	Org-012/017	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	µg/L	0.01	Org-012/017	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	µg/L	0.01	Org-012/017	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	µg/L	0.01	Org-012/017	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	µg/L	0.01	Org-012/017	<0.01	[NT]	[NT]	[NT]	[NT]	130	[NT]
Aroclor 1260	µg/L	0.01	Org-012/017	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate <i>p</i> -Terphenyl-d14	%		Ext-054	89	[NT]	[NT]	[NT]	[NT]	122	[NT]

QUALITY CONTROL: Total Phenolics in Water						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			01/02/2018	[NT]	[NT]	[NT]	[NT]	01/02/2018	[NT]
Date analysed	-			01/02/2018	[NT]	[NT]	[NT]	[NT]	01/02/2018	[NT]
Total Phenolics (as Phenol)	mg/L	0.05	Inorg-031	<0.05	[NT]	[NT]	[NT]	[NT]	99	[NT]

QUALITY CONTROL: HM in water - dissolved						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	184133-3
Date prepared	-			01/02/2018	2	01/02/2018	01/02/2018		01/02/2018	01/02/2018
Date analysed	-			01/02/2018	2	01/02/2018	01/02/2018		01/02/2018	01/02/2018
Arsenic-Dissolved	µg/L	1	Metals-022	<1	2	4	[NT]		99	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	2	<0.1	[NT]		106	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	2	<1	[NT]		97	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	2	1	[NT]		99	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	2	<1	[NT]		108	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	2	<0.05	<0.05	0	108	107
Manganese-Dissolved	µg/L	5	Metals-022	<5	2	200	[NT]		98	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	<1	2	2	[NT]		97	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	2	5	[NT]		98	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	184133-2
Date prepared	-			30/01/2018	1	30/01/2018	30/01/2018		30/01/2018	30/01/2018
Date analysed	-			30/01/2018	1	30/01/2018	30/01/2018		30/01/2018	30/01/2018
Nitrate as N in water	mg/L	0.005	Inorg-055	<0.005	1	0.04	0.04	0	101	100
Nitrite as N in water	mg/L	0.005	Inorg-055	<0.005	1	0.005	0.005	0	117	106
Ammonia as N in water	mg/L	0.005	Inorg-057	<0.005	1	0.007	0.006	15	112	103

QUALITY CONTROL: Metals in Waters - Acid extractable						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date prepared	-			01/02/2018	[NT]	[NT]	[NT]	[NT]	01/02/2018	[NT]
Date analysed	-			02/02/2018	[NT]	[NT]	[NT]	[NT]	02/02/2018	[NT]
Phosphorus - Total	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	98	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
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LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	

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For VOCs in water samples, three vials are required for duplicate or spike analysis.

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Measurement Uncertainty estimates are available for most tests upon request.

Report Comments

Dissolved Metals: no filtered, preserved sample was received, therefore the unpreserved sample was filtered through 0.45 µm filter at the lab.
Note: there is a possibility some elements may be underestimated.

OCP/OP/PCB analysed by MPL. Report no. 206234

CERTIFICATE OF ANALYSIS 187774

Client Details

Client	Douglas Partners Pty Ltd
Attention	John Russell, Nicola Warton
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	<u>71459.09, Moorebank</u>
Number of Samples	5 WATER
Date samples received	21/03/2018
Date completed instructions received	21/03/2018

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	28/03/2018
Date of Issue	23/03/2018
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Results Approved By

Nick Sarlamis, Inorganics Supervisor

Authorised By



David Springer, General Manager

Miscellaneous Inorganics						
Our Reference		187774-1	187774-2	187774-3	187774-4	187774-5
Your Reference	UNITS	SW1	SW2	SW3	SW4	BD1/20180320
Date Sampled		20/03/2018	20/03/2018	20/03/2018	20/03/2018	20/03/2018
Type of sample		WATER	WATER	WATER	WATER	WATER
Date prepared	-	21/03/2018	21/03/2018	21/03/2018	21/03/2018	21/03/2018
Date analysed	-	21/03/2018	21/03/2018	21/03/2018	21/03/2018	21/03/2018
Ammonia as N in water	mg/L	0.029	0.014	0.023	0.012	0.017

Method ID	Methodology Summary
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Soils are analysed following a KCl extraction.

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	187774-2
Date prepared	-			21/03/2018	1	21/03/2018	21/03/2018		21/03/2018	21/03/2018
Date analysed	-			21/03/2018	1	21/03/2018	21/03/2018		21/03/2018	21/03/2018
Ammonia as N in water	mg/L	0.005	Inorg-057	<0.005	1	0.029	0.024	19	86	87

Result Definitions

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NA	Test not required
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<	Less than
>	Greater than
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LCS	Laboratory Control Sample
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Measurement Uncertainty estimates are available for most tests upon request.

WATER TEST

Page 1 of 4

Office:
PO BOX 591
SEVEN HILLS NSW 2147

Laboratory:
1/4 ABBOTT ROAD
SEVEN HILLS NSW 2147
Telephone: (02) 9838 8294
Fax: (02) 9838 8919
A.C.N. 098 982 140
A.B.N. 76 098 982 140
NATA No: 1884

ANALYTICAL REPORT for:

BENEDICT INDUSTRIES PTY LTD

PO BOX 10
MOOREBANK NSW 1875

ATTN: FLOYDE GILBERT

JOB NO: WC1334
CLIENT ORDER: BI 21391
DATE RECEIVED: 18/12/17
DATE COMPLETED: 12/01/18
TYPE OF SAMPLES: WATER
NO OF SAMPLES: 1



.....
Issued on 12/01/18
Sue Wyman
(Laboratory Supervisor)

WATER TEST

Page 2 of 4

ANALYTICAL REPORT

JOB NO: WC1334
CLIENT ORDER: BI 21391

DATE OF COLLECTION		18/12/17	18/12/17	18/12/17
SAMPLES		BOAT RAMP	BLANK	BOAT DUP
Biochemical Oxygen Demand	mg/L	<2	<2	<2
Chemical Oxygen Demand	mg/L	16	<2	17
Conductivity	uS/cm	43800	1.1	43900
Ammonium Nitrogen	mg/L	<0.1	<0.1	<0.1
Oxidised Nitrogen NOx-N	mg/L	0.08	<0.1	0.08
Total Kjeldahl Nitrogen	mg/L	0.6	<0.1	0.6
Total Nitrogen	mg/L	0.7	<0.1	0.7
pH		7.1	6.9	7.1
Total Phosphorus	mg/L	<0.1	<0.1	<0.1
Suspended Solids	mg/L	7	<2	7
Turbidity	NTU	4.0	<0.2	4.0
Soluble Mercury	mg/L	<0.0001	<0.0001	<0.0001
Total Mercury	mg/L	<0.0001	<0.0001	<0.0001
Dissolved Oxygen	mg/L	8.1	8.0	8.1

WATER TEST

Page 3 of 4

LABORATORY DUPLICATE REPORT

JOB NO: WC1334

CLIENT ORDER: BI 21391

Sample Number	Analyte	Units	MDL	Sample Result	Duplicate Result	%RPD
BOAT/RAMP	BOD	mg/L	2	<2	<2	0
BOAT/RAMP	COD	mg/L	2	16	17	6
BOAT/RAMP	Conductivity	uS/cm	0.1	43800	43900	0
BOAT/RAMP	Ammonium	mg/L	0.1	<0.1	<0.1	0
BOAT/RAMP	Oxidised N	mg/L	0.1	0.08	0.08	0
BOAT/RAMP	TKN	mg/L	0.1	0.6	0.6	0
BOAT/RAMP	Total Nitrogen	mg/L	0.1	0.7	0.7	0
BOAT/RAMP	pH		0.1	7.1	7.1	0
BOAT/RAMP	Total Phosphor	mg/L	0.01	<0.1	<0.1	0
BOAT/RAMP	Suspended Soli	mg/L	2	7	7	0
BOAT/RAMP	Turbidity	NTU	0.2	4.0	4.0	0
BOAT/RAMP	Soluble Mercur	mg/L	0.0001	<0.0001	<0.0001	0
BOAT/RAMP	Total Mercury	mg/L	0.0001	<0.0001	<0.0001	0
BOAT/RAMP	Dissolved Oxyg	mg/L	0.1	8.1	8.1	0

Acceptance criteria:

RPD <50% for low level (<10xMDL)

RPD <20% for medium level (10-50xMDL)

RPD <10% for high level (>50xMDL)

No limit applies at <2xMDL

MDL = Method Detection Limit

All results are within the acceptance criteria

ANALYTICAL REPORT

JOB NO: WC1334

CLIENT ORDER: BI 21391

METHODS OF PREPARATION AND ANALYSIS

The tests contained in this report have been carried out on the samples as received by the laboratory, in accordance with APHA Standard Methods of Water and Wastewater 22nd Edition, or other approved methods listed below:

5210B	Biochemical Oxygen Demand
5220D	Chemical Oxygen Demand
2510B	Conductivity
4500G	Ammonium Nitrogen
4500F	Oxidised Nitrogen NO _x -N
4500BC	Total Kjeldahl Nitrogen
CALC.	Total Nitrogen
4500B	pH
4500BF	Total Phosphorus
2540D	Suspended Solids
2130B	Turbidity
3112B	Soluble Mercury
3112B	Total Mercury
5210B	Dissolved Oxygen

SITE: DAVY ROBINSON DRIVE BOAT RAMP AREA

SAMPLER: DAN ANDREWS

TIME: 11:30am



Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 182702

Client Details

Client	Watertest Pty Ltd
Attention	Results Email
Address	Unit 1/4 Abbott Rd, Seven Hills, NSW, 2147

Sample Details

Your Reference	<u>WC1334</u>
Number of Samples	1 water
Date samples received	22/12/2017
Date completed instructions received	22/12/2017

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	05/01/2018
Date of Issue	05/01/2018

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Results Approved By

Giovanni Agosti, Group Technical Manager
Jeremy Faircloth, Organics Supervisor

Authorised By

David Springer, General Manager

PAHs in Water		
Our Reference		182702-1
Your Reference	UNITS	Boat Ramp
Date Sampled		18/12/2017
Type of sample		water
Date extracted	-	28/12/2017
Date analysed	-	28/12/2017
Naphthalene	µg/L	<1
Acenaphthylene	µg/L	<1
Acenaphthene	µg/L	<1
Fluorene	µg/L	<1
Phenanthrene	µg/L	<1
Anthracene	µg/L	<1
Fluoranthene	µg/L	<1
Pyrene	µg/L	<1
Benzo(a)anthracene	µg/L	<1
Chrysene	µg/L	<1
Benzo(b,j+k)fluoranthene	µg/L	<2
Benzo(a)pyrene	µg/L	<1
Indeno(1,2,3-c,d)pyrene	µg/L	<1
Dibenzo(a,h)anthracene	µg/L	<1
Benzo(g,h,i)perylene	µg/L	<1
Benzo(a)pyrene TEQ	µg/L	<5
Total +ve PAH's	µg/L	NIL (+)VE
Surrogate p-Terphenyl-d14	%	116

HM in water - total		
Our Reference		182702-1
Your Reference	UNITS	Boat Ramp
Date Sampled		18/12/2017
Type of sample		water
Date prepared	-	04/01/2018
Date analysed	-	05/01/2018
Aluminium-Total	µg/L	760
Cadmium-Total	µg/L	0.4
Copper-Total	µg/L	4
Nickel-Total	µg/L	2
Lead-Total	µg/L	2
Zinc-Total	µg/L	11

Method ID	Methodology Summary
Metals-022	Determination of various metals by ICP-MS.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.

QUALITY CONTROL PAHs in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			28/12/2017					28/12/2017	
Date analysed	-			28/12/2017					28/12/2017	
Naphthalene	µg/L	1	Org-012	<1					87	
Acenaphthylene	µg/L	1	Org-012	<1						
Acenaphthene	µg/L	1	Org-012	<1						
Fluorene	µg/L	1	Org-012	<1					84	
Phenanthrene	µg/L	1	Org-012	<1					91	
Anthracene	µg/L	1	Org-012	<1						
Fluoranthene	µg/L	1	Org-012	<1					83	
Pyrene	µg/L	1	Org-012	<1					101	
Benzo(a)anthracene	µg/L	1	Org-012	<1						
Chrysene	µg/L	1	Org-012	<1					94	
Benzo(b,j,k)fluoranthene	µg/L	2	Org-012	<2						
Benzo(a)pyrene	µg/L	1	Org-012	<1					97	
Indeno(1,2,3-c,d)pyrene	µg/L	1	Org-012	<1						
Dibenzo(a,h)anthracene	µg/L	1	Org-012	<1						
Benzo(g,h,i)perylene	µg/L	1	Org-012	<1						
Surrogate p-Terphenyl-d14	%		Org-012	86					100	

QUALITY CONTROL: HM in water - total					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			04/01/2018					04/01/2018	
Date analysed	-			05/01/2018					05/01/2018	
Aluminium-Total	µg/L	10	Metals-022	<10					106	
Cadmium-Total	µg/L	0.1	Metals-022	<0.1					110	
Copper-Total	µg/L	1	Metals-022	<1					103	
Nickel-Total	µg/L	1	Metals-022	<1					99	
Lead-Total	µg/L	1	Metals-022	<1					109	
Zinc-Total	µg/L	1	Metals-022	<1					104	

Result Definitions

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When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Report Comments

Total metals: no preserved sample was received, therefore analysis was conducted from the unpreserved sample bottle.

Note: there is a possibility some elements may be underestimated.

WATERTEST

Page 1 of 4

Office:
PO BOX 591
SEVEN HILLS NSW 2147

Laboratory:
1/4 ABBOTT ROAD
SEVEN HILLS NSW 2147
Telephone: (02) 9838 8294
Fax: (02) 9838 8919
A.C.N. 098 982 140
A.B.N. 76 098 982 140
NATA No: 1884

ANALYTICAL REPORT for:

BENEDICT INDUSTRIES PTY LTD

PO BOX 10
MOOREBANK NSW 1875

ATTN: FLOYDE GILBERT

JOB NO: WC1419
CLIENT ORDER: 15/01/18
DATE RECEIVED: 15/01/18
DATE COMPLETED: 31/01/18
TYPE OF SAMPLES: WATER
NO OF SAMPLES: 1



.....*Sue Wyman*.....
Issued on 31/01/18
Sue Wyman
(Laboratory Supervisor)

ANALYTICAL REPORT

JOB NO: WC1419

CLIENT ORDER: 15/01/18

DATE OF COLLECTION		15/01/18	15/01/18	15/01/18
SAMPLES		BOAT RAMP	BLANK	BOAT DUP
Biochemical Oxygen Demand	mg/L	<2	<2	<2
Chemical Oxygen Demand	mg/L	38	<2	37
Conductivity	uS/cm	52500	1.0	52400
Ammonium Nitrogen	mg/L	<0.1	<0.1	<0.1
Oxidised Nitrogen NOx-N	mg/L	0.11	<0.1	0.12
Total Kjeldahl Nitrogen	mg/L	1.9	<0.1	2.0
Total Nitrogen	mg/L	2.0	<0.1	2.1
pH		7.2	6.9	7.2
Total Phosphorus	mg/L	<0.1	<0.1	<0.1
Suspended Solids	mg/L	3	<2	3
Turbidity	NTU	3.4	<0.2	3.4
Soluble Mercury	mg/L	<0.0001	<0.0001	<0.0001
Total Mercury	mg/L	<0.0001	<0.0001	<0.0001
Dissolved Oxygen	mg/L	8.0	8.1	8.0

WATER TEST

Page 3 of 4

LABORATORY DUPLICATE REPORT

JOB NO: WC1419

CLIENT ORDER: 15/01/18

Sample Number	Analyte	Units	MDL	Sample Result	Duplicate Result	%RPD
BOAT/RAMP	BOD	mg/L	2	<2	<2	0
BOAT/RAMP	COD	mg/L	2	38	37	3
BOAT/RAMP	Conductivity	uS/cm	0.1	52500	52400	0
BOAT/RAMP	Ammonium	mg/L	0.1	<0.1	<0.1	0
BOAT/RAMP	Oxidised N	mg/L	0.1	0.11	0.12	8
BOAT/RAMP	TKN	mg/L	0.1	1.9	2.0	5
BOAT/RAMP	Total Nitrogen	mg/L	0.1	2.0	2.1	5
BOAT/RAMP	pH		0.1	7.2	7.2	0
BOAT/RAMP	Total Phosphor	mg/L	0.01	<0.1	<0.1	0
BOAT/RAMP	Suspended Soli	mg/L	2	3	3	0
BOAT/RAMP	Turbidity	NTU	0.2	3.4	3.4	0
BOAT/RAMP	Soluble Mercur	mg/L	0.0001	<0.0001	<0.0001	0
BOAT/RAMP	Total Mercury	mg/L	0.0001	<0.0001	<0.0001	0
BOAT/RAMP	Dissolved Oxyg	mg/L	0.1	8.0	8.0	0

Acceptance criteria:

RPD <50% for low level (<10xMDL)

RPD <20% for medium level (10-50xMDL)

RPD <10% for high level (>50xMDL)

No limit applies at <2xMDL

MDL = Method Detection Limit

All results are within the acceptance criteria

ANALYTICAL REPORT

JOB NO: WC1419

CLIENT ORDER: 15/01/18

METHODS OF PREPARATION AND ANALYSIS

The tests contained in this report have been carried out on the samples as received by the laboratory, in accordance with APHA Standard Methods of Water and Wastewater 22nd Edition, or other approved methods listed below:

5210B	Biochemical Oxygen Demand
5220D	Chemical Oxygen Demand
2510B	Conductivity
4500G	Ammonium Nitrogen
4500F	Oxidised Nitrogen NOx-N
4500BC	Total Kjeldahl Nitrogen
CALC.	Total Nitrogen
4500B	pH
4500BF	Total Phosphorus
2540D	Suspended Solids
2130B	Turbidity
3112B	Soluble Mercury
3112B	Total Mercury
5210B	Dissolved Oxygen

SITE: DAVY ROBINSON DRIVE BOAT RAMP AREA

SAMPLER: DAN ANDREWS

TIME: 11:30am



Envirolab Services Pty Ltd

ABN 37 112 535 645

12 Ashley St Chatswood NSW 2067

ph 02 9910 6200 fax 02 9910 6201

customerservice@envirolab.com.au

www.envirolab.com.au

CERTIFICATE OF ANALYSIS 183291

Client Details

Client	Watertest Pty Ltd
Attention	Results Email
Address	Unit 1/4 Abbott Rd, Seven Hills, NSW, 2147

Sample Details

Your Reference	<u>WC1419</u>
Number of Samples	1 water
Date samples received	15/01/2018
Date completed instructions received	15/01/2018

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	22/01/2018
Date of Issue	22/01/2018

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By

Jaimie Loa-Kum-Cheung, Senior Chemist
Steven Luong, Senior Chemist

Authorised By

David Springer, General Manager

PAHs in Water		
Our Reference		183291-1
Your Reference	UNITS	Boat Ramp
Type of sample		water
Date extracted	-	16/01/2018
Date analysed	-	16/01/2018
Naphthalene	µg/L	<1
Acenaphthylene	µg/L	<1
Acenaphthene	µg/L	<1
Fluorene	µg/L	<1
Phenanthrene	µg/L	<1
Anthracene	µg/L	<1
Fluoranthene	µg/L	<1
Pyrene	µg/L	<1
Benzo(a)anthracene	µg/L	<1
Chrysene	µg/L	<1
Benzo(b,j+k)fluoranthene	µg/L	<2
Benzo(a)pyrene	µg/L	<1
Indeno(1,2,3-c,d)pyrene	µg/L	<1
Dibenzo(a,h)anthracene	µg/L	<1
Benzo(g,h,i)perylene	µg/L	<1
Benzo(a)pyrene TEQ	µg/L	<5
Total +ve PAH's	µg/L	NIL (+)VE
Surrogate p-Terphenyl-d14	%	65

HM in water - dissolved		
Our Reference		183291-1
Your Reference	UNITS	Boat Ramp
Type of sample		water
Date prepared	-	16/01/2018
Date analysed	-	16/01/2018
Aluminium-Dissolved	µg/L	<10
Cadmium-Dissolved	µg/L	0.1
Copper-Dissolved	µg/L	1
Nickel-Dissolved	µg/L	<1
Lead-Dissolved	µg/L	<1
Zinc-Dissolved	µg/L	4

Method ID	Methodology Summary
Metals-022	Determination of various metals by ICP-MS.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.

QUALITY CONTROL: PAHs in Water					Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1 [NT]
Date extracted	-			16/01/2018					16/01/2018
Date analysed	-			16/01/2018					16/01/2018
Naphthalene	µg/L	1	Org-012	<1					128
Acenaphthylene	µg/L	1	Org-012	<1					
Acenaphthene	µg/L	1	Org-012	<1					
Fluorene	µg/L	1	Org-012	<1					129
Phenanthrene	µg/L	1	Org-012	<1					127
Anthracene	µg/L	1	Org-012	<1					
Fluoranthene	µg/L	1	Org-012	<1					120
Pyrene	µg/L	1	Org-012	<1					130
Benzo(a)anthracene	µg/L	1	Org-012	<1					
Chrysene	µg/L	1	Org-012	<1					113
Benzo(b,j,k)fluoranthene	µg/L	2	Org-012	<2					
Benzo(a)pyrene	µg/L	1	Org-012	<1					121
Indeno(1,2,3-c,d)pyrene	µg/L	1	Org-012	<1					
Dibenzo(a,h)anthracene	µg/L	1	Org-012	<1					
Benzo(g,h,i)perylene	µg/L	1	Org-012	<1					
Surrogate p-Terphenyl-d14	%		Org-012	83					122

QUALITY CONTROL: HM in water - dissolved					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			16/01/2018					16/01/2018	
Date analysed	-			16/01/2018					16/01/2018	
Aluminium-Dissolved	µg/L	10	Metals-022	<10					104	
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1					105	
Copper-Dissolved	µg/L	1	Metals-022	<1					95	
Nickel-Dissolved	µg/L	1	Metals-022	<1					97	
Lead-Dissolved	µg/L	1	Metals-022	<1					102	
Zinc-Dissolved	µg/L	1	Metals-022	<1					95	

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Report Comments

Dissolved Metals: no filtered, preserved sample was received, therefore the unpreserved sample was filtered through 0.45 µm filter at the lab.

Note: there is a possibility some elements may be underestimated.

WATER TEST

Page 1 of 4

Office:
PO BOX 591
SEVEN HILLS NSW 2147

Laboratory:
1/4 ABBOTT ROAD
SEVEN HILLS NSW 2147
Telephone: (02) 9838 8294
Fax: (02) 9838 8919
A.C.N. 098 982 140
A.B.N. 76 098 982 140
NATA No: 1884

ANALYTICAL REPORT for:

BENEDICT INDUSTRIES PTY LTD

PO BOX 10
MOOREBANK NSW 1875

ATTN: FLOYDE GILBERT

JOB NO: WD0073
CLIENT ORDER: BI 22318
DATE RECEIVED: 15/02/18
DATE COMPLETED: 28/02/18
TYPE OF SAMPLES: WATER
NO OF SAMPLES: 1



.....
Issued on 28/02/18
Sue Wyman
(Laboratory Supervisor)

WATER TEST

Page 2 of 4

ANALYTICAL REPORT

JOB NO: WD0073

CLIENT ORDER: BI 22318

DATE OF COLLECTION		15/02/18	15/02/18	15/02/18
SAMPLES		BOAT RAMP	BLANK	BOAT DUP
Biochemical Oxygen Demand	mg/L	<2	<2	<2
Chemical Oxygen Demand	mg/L	49	<2	48
Conductivity	uS/cm	48900	1.2	49000
Ammonium Nitrogen	mg/L	<0.1	<0.1	<0.1
Oxidised Nitrogen NOx-N	mg/L	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen	mg/L	0.6	<0.1	0.5
Total Nitrogen	mg/L	0.6	<0.1	0.5
pH		6.6	7.0	6.6
Total Phosphorus	mg/L	0.06	<0.01	0.09
Suspended Solids	mg/L	4	<2	4
Turbidity	NTU	3.6	<0.2	3.6
Soluble Mercury	mg/L	<0.0001	<0.0001	<0.0001
Total Mercury	mg/L	<0.0001	<0.0001	<0.0001
Dissolved Oxygen	mg/L	8.2	7.8	8.2

WATER TEST

Page 3 of 4

LABORATORY DUPLICATE REPORT

JOB NO: WD0073

CLIENT ORDER: BI 22318

Sample Number	Analyte	Units	MDL	Sample Result	Duplicate Result	%RPD
BOAT/RAMP	BOD	mg/L	2	<2	<2	0
BOAT/RAMP	COD	mg/L	2	49	48	2
BOAT/RAMP	Conductivity	uS/cm	0.1	48900	49000	0
BOAT/RAMP	Ammonium	mg/L	0.1	<0.1	<0.1	0
BOAT/RAMP	Oxidised N	mg/L	0.1	<0.1	<0.1	0
BOAT/RAMP	TKN	mg/L	0.1	0.6	0.5	17
BOAT/RAMP	Total Nitrogen	mg/L	0.1	0.6	0.5	17
BOAT/RAMP	pH		0.1	6.6	6.6	0
BOAT/RAMP	Total Phosphor	mg/L	0.01	0.06	0.09	38
BOAT/RAMP	Suspended Soli	mg/L	2	4	4	0
BOAT/RAMP	Turbidity	NTU	0.2	3.6	3.6	0
BOAT/RAMP	Soluble Mercur	mg/L	0.0001	<0.0001	<0.0001	0
BOAT/RAMP	Total Mercury	mg/L	0.0001	<0.0001	<0.0001	0
BOAT/RAMP	Dissolved Oxyg	mg/L	0.1	8.2	8.2	0

Acceptance criteria:

RPD <50% for low level (<10xMDL)

RPD <20% for medium level (10-50xMDL)

RPD <10% for high level (>50xMDL)

No limit applies at <2xMDL

MDL = Method Detection Limit

All results are within the acceptance criteria

ANALYTICAL REPORT

JOB NO: WD0073

CLIENT ORDER: BI 22318

METHODS OF PREPARATION AND ANALYSIS

The tests contained in this report have been carried out on the samples as received by the laboratory, in accordance with APHA Standard Methods of Water and Wastewater 22nd Edition, or other approved methods listed below:

5210B	Biochemical Oxygen Demand
5220D	Chemical Oxygen Demand
2510B	Conductivity
4500G	Ammonium Nitrogen
4500F	Oxidised Nitrogen NOx-N
4500BC	Total Kjeldahl Nitrogen
CALC.	Total Nitrogen
4500B	pH
4500BF	Total Phosphorus
2540D	Suspended Solids
2130B	Turbidity
3112B	Soluble Mercury
3112B	Total Mercury
5210B	Dissolved Oxygen

SITE: DAVY ROBINSON DRIVE BOAT RAMP AREA

SAMPLER: DAN ANDREWS

TIME: 10.30am

CERTIFICATE OF ANALYSIS 185383

Client Details

Client Watertest Pty Ltd
Attention Results Email
Address Unit 1/4 Abbott Rd, Seven Hills, NSW, 2147

Sample Details

Your Reference WD0073
Number of Samples 1 Water
Date samples received 16/01/2018
Date completed instructions received 16/01/2018

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

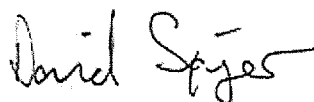
Report Details

Date results requested by 23/02/2018
Date of Issue 21/02/2018
NATA Accreditation Number 2901. This document shall not be reproduced except in full.
Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By

Jaimie Loa-Kum-Cheung, Senior Chemist
Steven Luong, Senior Chemist

Authorised By



David Springer, General Manager

PAHs in Water		
Our Reference		185383-1
Your Reference	UNITS	Boat Ramp
Type of sample		Water
Date extracted	-	19/02/2018
Date analysed	-	19/02/2018
Naphthalene	µg/L	<1
Acenaphthylene	µg/L	<1
Acenaphthene	µg/L	<1
Fluorene	µg/L	<1
Phenanthrene	µg/L	<1
Anthracene	µg/L	<1
Fluoranthene	µg/L	<1
Pyrene	µg/L	<1
Benzo(a)anthracene	µg/L	<1
Chrysene	µg/L	<1
Benzo(b,j+k)fluoranthene	µg/L	<2
Benzo(a)pyrene	µg/L	<1
Indeno(1,2,3-c,d)pyrene	µg/L	<1
Dibenzo(a,h)anthracene	µg/L	<1
Benzo(g,h,i)perylene	µg/L	<1
Benzo(a)pyrene TEQ	µg/L	<5
Total +ve PAH's	µg/L	NIL (+)VE
Surrogate p-Terphenyl-d14	%	97

HM in water - dissolved		
Our Reference		185383-1
Your Reference	UNITS	Boat Ramp
Type of sample		Water
Date prepared	-	19/02/2018
Date analysed	-	19/02/2018
Aluminium-Dissolved	µg/L	<10
Cadmium-Dissolved	µg/L	0.2
Copper-Dissolved	µg/L	2
Nickel-Dissolved	µg/L	1
Lead-Dissolved	µg/L	<1
Zinc-Dissolved	µg/L	8

Method ID	Methodology Summary
Metals-022	Determination of various metals by ICP-MS.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.

QUALITY CONTROL: PAHs in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			19/02/2018					19/02/2018	
Date analysed	-			19/02/2018					19/02/2018	
Naphthalene	µg/L	1	Org-012	<1					81	
Acenaphthylene	µg/L	1	Org-012	<1						
Acenaphthene	µg/L	1	Org-012	<1						
Fluorene	µg/L	1	Org-012	<1					78	
Phenanthrene	µg/L	1	Org-012	<1					85	
Anthracene	µg/L	1	Org-012	<1						
Fluoranthene	µg/L	1	Org-012	<1					79	
Pyrene	µg/L	1	Org-012	<1					82	
Benzo(a)anthracene	µg/L	1	Org-012	<1						
Chrysene	µg/L	1	Org-012	<1					89	
Benzo(b,j+k)fluoranthene	µg/L	2	Org-012	<2						
Benzo(a)pyrene	µg/L	1	Org-012	<1					110	
Indeno(1,2,3-c,d)pyrene	µg/L	1	Org-012	<1						
Dibenzo(a,h)anthracene	µg/L	1	Org-012	<1						
Benzo(g,h,i)perylene	µg/L	1	Org-012	<1						
Surrogate p-Terphenyl-d14	%		Org-012	109					106	

QUALITY CONTROL: HM in water - dissolved					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date prepared	-			19/02/2018					19/02/2018	
Date analysed	-			19/02/2018					19/02/2018	
Aluminium-Dissolved	µg/L	10	Metals-022	<10					113	
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1					102	
Copper-Dissolved	µg/L	1	Metals-022	<1					106	
Nickel-Dissolved	µg/L	1	Metals-022	<1					97	
Lead-Dissolved	µg/L	1	Metals-022	<1					105	
Zinc-Dissolved	µg/L	1	Metals-022	<1					99	

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Report Comments

Dissolved Metals: no preserved sample was received, therefore the unpreserved sample was filtered through 0.45 µm filter at the lab.
Note: there is a possibility some elements may be underestimated.

WATERTEST

Page 1 of 4

Office:
PO BOX 591
SEVEN HILLS NSW 2147

Laboratory:
1/4 ABBOTT ROAD
SEVEN HILLS NSW 2147
Telephone: (02) 9838 8294
Fax: (02) 9838 8919
A.C.N. 098 982 140
A.B.N. 76 098 982 140
NATA No: 1884

ANALYTICAL REPORT for:

BENEDICT INDUSTRIES PTY LTD

PO BOX 10
MOOREBANK NSW 1875

ATTN: FLOYDE GILBERT

JOB NO: WD0184
CLIENT ORDER: 12/03/18
DATE RECEIVED: 12/03/18
DATE COMPLETED: 23/03/18
TYPE OF SAMPLES: WATER
NO OF SAMPLES: 1



.....
Issued on 23/03/18
Sue Wyman
(Laboratory Supervisor)

ANALYTICAL REPORT

JOB NO: WD0184
CLIENT ORDER: 12/03/18

DATE OF COLLECTION		15/02/18	15/02/18	15/02/18
SAMPLES		BOAT RAMP	BLANK	BOAT DUP
Biochemical Oxygen Demand	mg/L	<2	<2	<2
Chemical Oxygen Demand	mg/L	<2	<2	<2
Conductivity	uS/cm	25000	1.2	25000
Ammonium Nitrogen	mg/L	<0.1	<0.1	<0.1
Oxidised Nitrogen NOx-N	mg/L	0.19	<0.1	0.19
Total Kjeldahl Nitrogen	mg/L	1.0	<0.1	1.0
Total Nitrogen	mg/L	1.2	<0.1	1.2
pH		7.0	6.9	7.0
Total Phosphorus	mg/L	<0.1	<0.1	<0.1
Suspended Solids	mg/L	6	<2	6
Turbidity	NTU	3.7	<0.2	3.7
Soluble Mercury	mg/L	<0.0001	<0.0001	<0.0001
Total Mercury	mg/L	<0.0001	<0.0001	<0.0001
Dissolved Oxygen	mg/L	8.9	7.8	8.9

LABORATORY DUPLICATE REPORT

JOB NO: WD0184

CLIENT ORDER: 12/03/18

Sample Number	Analyte	Units	MDL	Sample Result	Duplicate Result	%RPD
BOAT/RAMP	BOD	mg/L	2	<2	<2	0
BOAT/RAMP	COD	mg/L	2	<2	<2	0
BOAT/RAMP	Conductivity	uS/cm	0.1	25000	25000	0
BOAT/RAMP	Ammonium	mg/L	0.1	<0.1	<0.1	0
BOAT/RAMP	Oxidised N	mg/L	0.1	0.19	0.19	0
BOAT/RAMP	TKN	mg/L	0.1	1.0	1.0	0
BOAT/RAMP	Total Nitrogen	mg/L	0.1	1.2	1.2	0
BOAT/RAMP	pH		0.1	7.0	7.0	0
BOAT/RAMP	Total Phosphor	mg/L	0.01	<0.1	<0.1	0
BOAT/RAMP	Suspended Soli	mg/L	2	6	6	0
BOAT/RAMP	Turbidity	NTU	0.2	3.7	3.7	0
BOAT/RAMP	Soluble Mercur	mg/L	0.0001	<0.0001	<0.0001	0
BOAT/RAMP	Total Mercury	mg/L	0.0001	<0.0001	<0.0001	0
BOAT/RAMP	Dissolved Oxyg	mg/L	0.1	8.9	8.9	0

Acceptance criteria:

RPD <50% for low level (<10xMDL)

RPD <20% for medium level (10-50xMDL)

RPD <10% for high level (>50xMDL)

No limit applies at <2xMDL

MDL = Method Detection Limit

All results are within the acceptance criteria

ANALYTICAL REPORT

JOB NO: WD0184

CLIENT ORDER: 12/03/18

METHODS OF PREPARATION AND ANALYSIS

The tests contained in this report have been carried out on the samples as received by the laboratory, in accordance with APHA Standard Methods of Water and Wastewater 22nd Edition, or other approved methods listed below:

5210B	Biochemical Oxygen Demand
5220D	Chemical Oxygen Demand
2510B	Conductivity
4500G	Ammonium Nitrogen
4500F	Oxidised Nitrogen NOx-N
4500BC	Total Kjeldahl Nitrogen
CALC.	Total Nitrogen
4500B	pH
4500BF	Total Phosphorus
2540D	Suspended Solids
2130B	Turbidity
3112B	Soluble Mercury
3112B	Total Mercury
5210B	Dissolved Oxygen

SITE: DAVY ROBINSON DRIVE BOAT RAMP AREA

SAMPLER: DAN ANDREWS

TIME: 12.50pm; WATER TEMP: 24°C; WEATHER: PARTLY CLOUDY TEMP=26°C.

CERTIFICATE OF ANALYSIS 187422

Client Details

Client Watertest Pty Ltd
Attention Results Email
Address Unit 1/4 Abbott Rd, Seven Hills, NSW, 2147

Sample Details

Your Reference WD0184
Number of Samples 1 Water
Date samples received 16/03/2018
Date completed instructions received 16/03/2018

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

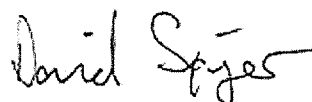
Report Details

Date results requested by 23/03/2018
Date of Issue 22/03/2018
NATA Accreditation Number 2901. This document shall not be reproduced except in full.
Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By

Jaimie Loa-Kum-Cheung, Senior Chemist
Jeremy Faircloth, Organics Supervisor

Authorised By



David Springer, General Manager

PAHs in Water		
Our Reference		187422-1
Your Reference	UNITS	Boat Ramp
Date Sampled		12/03/2018
Type of sample		Water
Date extracted	-	19/03/2018
Date analysed	-	19/03/2018
Naphthalene	µg/L	<1
Acenaphthylene	µg/L	<1
Acenaphthene	µg/L	<1
Fluorene	µg/L	<1
Phenanthrene	µg/L	<1
Anthracene	µg/L	<1
Fluoranthene	µg/L	<1
Pyrene	µg/L	<1
Benzo(a)anthracene	µg/L	<1
Chrysene	µg/L	<1
Benzo(b,j+k)fluoranthene	µg/L	<2
Benzo(a)pyrene	µg/L	<1
Indeno(1,2,3-c,d)pyrene	µg/L	<1
Dibenzo(a,h)anthracene	µg/L	<1
Benzo(g,h,i)perylene	µg/L	<1
Benzo(a)pyrene TEQ	µg/L	<5
Total +ve PAH's	µg/L	NIL (+)VE
Surrogate p-Terphenyl-d14	%	107

HM in water - dissolved		
Our Reference		187422-1
Your Reference	UNITS	Boat Ramp
Date Sampled		12/03/2018
Type of sample		Water
Date prepared	-	20/03/2018
Date analysed	-	20/03/2018
Aluminium-Dissolved	µg/L	<10
Cadmium-Dissolved	µg/L	0.2
Copper-Dissolved	µg/L	1
Nickel-Dissolved	µg/L	2
Lead-Dissolved	µg/L	<1
Zinc-Dissolved	µg/L	7

Method ID	Methodology Summary
Metals-022	Determination of various metals by ICP-MS.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.

QUALITY CONTROL: PAHs in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			19/03/2018					19/03/2018	
Date analysed	-			19/03/2018					19/03/2018	
Naphthalene	µg/L	1	Org-012	<1					78	
Acenaphthylene	µg/L	1	Org-012	<1						
Acenaphthene	µg/L	1	Org-012	<1						
Fluorene	µg/L	1	Org-012	<1					87	
Phenanthrene	µg/L	1	Org-012	<1					88	
Anthracene	µg/L	1	Org-012	<1						
Fluoranthene	µg/L	1	Org-012	<1					86	
Pyrene	µg/L	1	Org-012	<1					89	
Benzo(a)anthracene	µg/L	1	Org-012	<1						
Chrysene	µg/L	1	Org-012	<1					90	
Benzo(b,j+k)fluoranthene	µg/L	2	Org-012	<2						
Benzo(a)pyrene	µg/L	1	Org-012	<1					103	
Indeno(1,2,3-c,d)pyrene	µg/L	1	Org-012	<1						
Dibenzo(a,h)anthracene	µg/L	1	Org-012	<1						
Benzo(g,h,i)perylene	µg/L	1	Org-012	<1						
Surrogate p-Terphenyl-d14	%		Org-012	123					117	

QUALITY CONTROL: HM in water - dissolved					Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2 [NT]
Date prepared	-			20/03/2018					20/03/2018
Date analysed	-			20/03/2018					20/03/2018
Aluminium-Dissolved	µg/L	10	Metals-022	<10					97
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1					91
Copper-Dissolved	µg/L	1	Metals-022	<1					87
Nickel-Dissolved	µg/L	1	Metals-022	<1					88
Lead-Dissolved	µg/L	1	Metals-022	<1					90
Zinc-Dissolved	µg/L	1	Metals-022	<1					91

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Report Comments

Dissolved Metals: no preserved sample was received, therefore the unpreserved sample was filtered through 0.45 µm filter at the lab.
Note: there is a possibility some elements may be underestimated.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

WATERTEST

Page 1 of 4

Office:
PO BOX 591
SEVEN HILLS NSW 2147

Laboratory:
1/4 ABBOTT ROAD
SEVEN HILLS NSW 2147
Telephone: (02) 9838 8294
Fax: (02) 9838 8919
A.C.N. 098 982 140
A.B.N. 76 098 982 140
NATA No: 1884

ANALYTICAL REPORT for:

BENEDICT INDUSTRIES PTY LTD

PO BOX 10
MOOREBANK NSW 1875

ATTN: FLOYDE GILBERT

JOB NO: WD0326A
CLIENT ORDER: 13/04/18
DATE RECEIVED: 13/04/18
DATE COMPLETED: 30/04/18
TYPE OF SAMPLES: WATER
NO OF SAMPLES: 1



.....*Sue Wyman*.....
Issued on 30/04/18
Sue Wyman
(Laboratory Supervisor)

WATER TEST

Page 2 of 4

ANALYTICAL REPORT

JOB NO: WD0326A

CLIENT ORDER: 13/04/18

DATE OF COLLECTION		13/04/18	13/04/18	13/04/18
SAMPLES		BOAT RAMP	BLANK	BOAT DUP
Biochemical Oxygen Demand	mg/L	<2	<2	<2
Chemical Oxygen Demand	mg/L	76	<2	76
Conductivity	uS/cm	47100	<1	47200
Ammonium Nitrogen	mg/L	<0.1	<0.1	<0.1
Oxidised Nitrogen NOx-N	mg/L	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen	mg/L	0.8	<0.1	0.7
Total Nitrogen	mg/L	0.8	<0.1	0.7
pH		6.7	7.0	6.7
Total Phosphorus	mg/L	0.12	<0.1	0.12
Suspended Solids	mg/L	6	<2	6
Turbidity	NTU	4.4	<0.2	4.4
Soluble Mercury	mg/L	<0.0001	<0.0001	<0.0001
Total Mercury	mg/L	<0.0001	<0.0001	<0.0001
Dissolved Oxygen	mg/L	8.2	7.6	8.2

WATER TEST

Page 3 of 4

LABORATORY DUPLICATE REPORT

JOB NO: WD0326A

CLIENT ORDER: 13/04/18

Sample Number	Analyte	Units	MDL	Sample Result	Duplicate Result	%RPD
BOAT/RAMP	BOD	mg/L	2	<2	<2	0
BOAT/RAMP	COD	mg/L	2	76	76	0
BOAT/RAMP	Conductivity	uS/cm	0.1	47100	47200	0
BOAT/RAMP	Ammonium	mg/L	0.1	<0.1	<0.1	0
BOAT/RAMP	Oxidised N	mg/L	0.1	<0.1	<0.1	0
BOAT/RAMP	TKN	mg/L	0.1	0.8	0.7	13
BOAT/RAMP	Total Nitrogen	mg/L	0.1	0.8	0.7	13
BOAT/RAMP	pH		0.1	6.7	6.7	0
BOAT/RAMP	Total Phosphor	mg/L	0.01	0.12	0.12	0
BOAT/RAMP	Suspended Soli	mg/L	2	6	6	0
BOAT/RAMP	Turbidity	NTU	0.2	4.4	4.4	0
BOAT/RAMP	Soluble Mercur	mg/L	0.0001	<0.0001	<0.0001	0
BOAT/RAMP	Total Mercury	mg/L	0.0001	<0.0001	<0.0001	0
BOAT/RAMP	Dissolved Oxyg	mg/L	0.1	8.2	8.2	0

Acceptance criteria:

RPD <50% for low level (<10xMDL)

RPD <20% for medium level (10-50xMDL)

RPD <10% for high level (>50xMDL)

No limit applies at <2xMDL

MDL = Method Detection Limit

All results are within the acceptance criteria

ANALYTICAL REPORT

JOB NO: WD0326A

CLIENT ORDER: 13/04/18

METHODS OF PREPARATION AND ANALYSIS

The tests contained in this report have been carried out on the samples as received by the laboratory, in accordance with APHA Standard Methods of Water and Wastewater 22nd Edition, or other approved methods listed below:

5210B	Biochemical Oxygen Demand
5220D	Chemical Oxygen Demand
2510B	Conductivity
4500G	Ammonium Nitrogen
4500F	Oxidised Nitrogen NOx-N
4500BC	Total Kjeldahl Nitrogen
CALC.	Total Nitrogen
4500B	pH
4500BF	Total Phosphorus
2540D	Suspended Solids
2130B	Turbidity
3112B	Soluble Mercury
3112B	Total Mercury
5210B	Dissolved Oxygen

SITE: DAVY ROBINSON DRIVE BOAT RAMP AREA

SAMPLER: DAN ANDREWS

TIME: 8.15am; WATER TEMP:24oC; WEATHER: CLEAR, TEMP=17oC.

CERTIFICATE OF ANALYSIS 189524

Client Details

Client Watertest Pty Ltd
Attention Sue Wyman
Address Unit 1/4 Abbott Rd, Seven Hills, NSW, 2147

Sample Details

Your Reference WD 0326
Number of Samples 1 Water
Date samples received 16/04/2018
Date completed instructions received 16/04/2018

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by 23/04/2018
Date of Issue 19/04/2018
NATA Accreditation Number 2901. This document shall not be reproduced except in full.
Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By

Jaimie Loa-Kum-Cheung, Senior Chemist
Jeremy Faircloth, Organics Supervisor

Authorised By



Jacinta Hurst, Laboratory Manager

PAHs in Water		
Our Reference		189524-1
Your Reference	UNITS	Boat Ramp
Date Sampled		13/04/2018
Type of sample		Water
Date extracted	-	17/04/2018
Date analysed	-	17/04/2018
Naphthalene	µg/L	<1
Acenaphthylene	µg/L	<1
Acenaphthene	µg/L	<1
Fluorene	µg/L	<1
Phenanthrene	µg/L	<1
Anthracene	µg/L	<1
Fluoranthene	µg/L	<1
Pyrene	µg/L	<1
Benzo(a)anthracene	µg/L	<1
Chrysene	µg/L	<1
Benzo(b,j+k)fluoranthene	µg/L	<2
Benzo(a)pyrene	µg/L	<1
Indeno(1,2,3-c,d)pyrene	µg/L	<1
Dibenzo(a,h)anthracene	µg/L	<1
Benzo(g,h,i)perylene	µg/L	<1
Benzo(a)pyrene TEQ	µg/L	<5
Total +ve PAH's	µg/L	NIL (+)VE
Surrogate p-Terphenyl-d14	%	83

HM in water - dissolved		
Our Reference		189524-1
Your Reference	UNITS	Boat Ramp
Date Sampled		13/04/2018
Type of sample		Water
Date prepared	-	17/04/2018
Date analysed	-	17/04/2018
Aluminium-Dissolved	µg/L	20
Cadmium-Dissolved	µg/L	0.4
Copper-Dissolved	µg/L	2
Nickel-Dissolved	µg/L	1
Lead-Dissolved	µg/L	<1
Zinc-Dissolved	µg/L	6

Method ID	Methodology Summary
Metals-022	Determination of various metals by ICP-MS.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.

QUALITY CONTROL: PAHs in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			17/04/2018	1	17/04/2018	17/04/2018		17/04/2018	
Date analysed	-			17/04/2018	1	17/04/2018	17/04/2018		17/04/2018	
Naphthalene	µg/L	1	Org-012	<1	1	<1	<1	0	76	
Acenaphthylene	µg/L	1	Org-012	<1	1	<1	<1	0		
Acenaphthene	µg/L	1	Org-012	<1	1	<1	<1	0		
Fluorene	µg/L	1	Org-012	<1	1	<1	<1	0	87	
Phenanthrene	µg/L	1	Org-012	<1	1	<1	<1	0	94	
Anthracene	µg/L	1	Org-012	<1	1	<1	<1	0		
Fluoranthene	µg/L	1	Org-012	<1	1	<1	<1	0	88	
Pyrene	µg/L	1	Org-012	<1	1	<1	<1	0	85	
Benzo(a)anthracene	µg/L	1	Org-012	<1	1	<1	<1	0		
Chrysene	µg/L	1	Org-012	<1	1	<1	<1	0	76	
Benzo(b,j+k)fluoranthene	µg/L	2	Org-012	<2	1	<2	<2	0		
Benzo(a)pyrene	µg/L	1	Org-012	<1	1	<1	<1	0	93	
Indeno(1,2,3-c,d)pyrene	µg/L	1	Org-012	<1	1	<1	<1	0		
Dibenzo(a,h)anthracene	µg/L	1	Org-012	<1	1	<1	<1	0		
Benzo(g,h,i)perylene	µg/L	1	Org-012	<1	1	<1	<1	0		
Surrogate <i>p</i> -Terphenyl-d14	%		Org-012	109	1	83	99	18	104	

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date prepared	-			17/04/2018					17/04/2018	
Date analysed	-			17/04/2018					17/04/2018	
Aluminium-Dissolved	µg/L	10	Metals-022	<10					91	
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1					102	
Copper-Dissolved	µg/L	1	Metals-022	<1					101	
Nickel-Dissolved	µg/L	1	Metals-022	<1					99	
Lead-Dissolved	µg/L	1	Metals-022	<1					100	
Zinc-Dissolved	µg/L	1	Metals-022	<1					102	

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Report Comments

Dissolved Metals: no preserved sample was received, therefore the unpreserved sample was filtered through 0.45 µm filter at the lab.

Note: there is a possibility some elements may be underestimated.

WATERTEST

Page 1 of 4

Office:
PO BOX 591
SEVEN HILLS NSW 2147

Laboratory:
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NATA No: 1884

ANALYTICAL REPORT for:

BENEDICT INDUSTRIES PTY LTD

PO BOX 10
MOOREBANK NSW 1875

ATTN: FLOYDE GILBERT

JOB NO: WD0478A

CLIENT ORDER: 18/05/18

DATE RECEIVED: 18/05/18

DATE COMPLETED: 31/05/18

TYPE OF SAMPLES: WATER

NO OF SAMPLES: 3



.....*Sue Wyman*.....
Issued on 31/05/18
Sue Wyman
(Laboratory Supervisor)

WATER TEST

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ANALYTICAL REPORT

JOB NO: WD0478A

CLIENT ORDER: 18/05/18

DATE OF COLLECTION		18/05/18	18/05/18	18/05/18
SAMPLES		BOAT RAMP	BLANK	BOAT DUP
Biochemical Oxygen Demand	mg/L	<2	<2	<2
Chemical Oxygen Demand	mg/L	20	<2	20
Conductivity	uS/cm	40800	<1	40900
Ammonium Nitrogen	mg/L	<0.1	<0.1	<0.1
Oxidised Nitrogen NOx-N	mg/L	0.13	<0.1	0.13
Total Kjeldahl Nitrogen	mg/L	1.0	<0.1	1.0
Total Nitrogen	mg/L	1.1	<0.1	1.1
pH		7.5	7.0	7.5
Total Phosphorus	mg/L	<0.1	<0.1	<0.1
Suspended Solids	mg/L	7	<2	7
Turbidity	NTU	4.0	<0.2	4.0
Soluble Mercury	mg/L	<0.0001	<0.0001	<0.0001
Total Mercury	mg/L	<0.0001	<0.0001	<0.0001
Dissolved Oxygen	mg/L	9.2	7.0	9.2

WATER TEST

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LABORATORY DUPLICATE REPORT

JOB NO: WD0478A

CLIENT ORDER: 18/05/18

Sample Number	Analyte	Units	MDL	Sample Result	Duplicate Result	%RPD
BOAT/RAMP	BOD	mg/L	2	<2	<2	0
BOAT/RAMP	COD	mg/L	2	20	20	0
BOAT/RAMP	Conductivity	uS/cm	0.1	40800	40900	0
BOAT/RAMP	Ammonium	mg/L	0.1	<0.1	<0.1	0
BOAT/RAMP	Oxidised N	mg/L	0.1	0.13	0.13	0
BOAT/RAMP	TKN	mg/L	0.1	1.0	1.0	0
BOAT/RAMP	Total Nitrogen	mg/L	0.1	1.1	1.1	0
BOAT/RAMP	pH		0.1	7.5	7.5	0
BOAT/RAMP	Total Phosphor	mg/L	0.01	<0.1	<0.1	0
BOAT/RAMP	Suspended Soli	mg/L	2	7	7	0
BOAT/RAMP	Turbidity	NTU	0.2	4.0	4.0	0
BOAT/RAMP	Soluble Mercur	mg/L	0.0001	<0.0001	<0.0001	0
BOAT/RAMP	Total Mercury	mg/L	0.0001	<0.0001	<0.0001	0
BOAT/RAMP	Dissolved Oxyg	mg/L	0.1	9.2	9.2	0

Acceptance criteria:

RPD <50% for low level (<10xMDL)

RPD <20% for medium level (10-50xMDL)

RPD <10% for high level (>50xMDL)

No limit applies at <2xMDL

MDL = Method Detection Limit

All results are within the acceptance criteria

ANALYTICAL REPORT

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METHODS OF PREPARATION AND ANALYSIS

The tests contained in this report have been carried out on the samples as received by the laboratory, in accordance with APHA Standard Methods of Water and Wastewater 22nd Edition, or other approved methods listed below:

5210B	Biochemical Oxygen Demand
5220D	Chemical Oxygen Demand
2510B	Conductivity
4500G	Ammonium Nitrogen
4500F	Oxidised Nitrogen NO _x -N
4500BC	Total Kjeldahl Nitrogen
CALC.	Total Nitrogen
4500B	pH
4500BF	Total Phosphorus
2540D	Suspended Solids
2130B	Turbidity
3112B	Soluble Mercury
3112B	Total Mercury
5210B	Dissolved Oxygen

SITE: DAVY ROBINSON DRIVE BOAT RAMP AREA

SAMPLER: DAN ANDREWS

TIME: 12.37pm; WATER TEMP:21oC; WEATHER: CLEAR, TEMP=19oC.

CERTIFICATE OF ANALYSIS 192546

Client Details

Client Watertest Pty Ltd
Attention Results Email
Address Unit 1/4 Abbott Rd, Seven Hills, NSW, 2147

Sample Details

Your Reference WD 0478 A
Number of Samples 1 Water
Date samples received 25/05/2018
Date completed instructions received 25/05/2018

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by 01/06/2018
Date of Issue 30/05/2018
NATA Accreditation Number 2901. This document shall not be reproduced except in full.
Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By

Jaimie Loa-Kum-Cheung, Senior Chemist
Steven Luong, Senior Chemist

Authorised By



Jacinta Hurst, Laboratory Manager

PAHs in Water		
Our Reference		192546-1
Your Reference	UNITS	Boat Ramp
Date Sampled		18/05/2018
Type of sample		Water
Date extracted	-	28/05/2018
Date analysed	-	28/05/2018
Naphthalene	µg/L	<1
Acenaphthylene	µg/L	<1
Acenaphthene	µg/L	<1
Fluorene	µg/L	<1
Phenanthrene	µg/L	<1
Anthracene	µg/L	<1
Fluoranthene	µg/L	<1
Pyrene	µg/L	<1
Benzo(a)anthracene	µg/L	<1
Chrysene	µg/L	<1
Benzo(b,j+k)fluoranthene	µg/L	<2
Benzo(a)pyrene	µg/L	<1
Indeno(1,2,3-c,d)pyrene	µg/L	<1
Dibenzo(a,h)anthracene	µg/L	<1
Benzo(g,h,i)perylene	µg/L	<1
Benzo(a)pyrene TEQ	µg/L	<5
Total +ve PAH's	µg/L	NIL (+)VE
Surrogate p-Terphenyl-d14	%	131

HM in water - dissolved		
Our Reference		192546-1
Your Reference	UNITS	Boat Ramp
Date Sampled		18/05/2018
Type of sample		Water
Date prepared	-	28/05/2018
Date analysed	-	28/05/2018
Aluminium-Dissolved	µg/L	<10
Cadmium-Dissolved	µg/L	<0.1
Copper-Dissolved	µg/L	2
Nickel-Dissolved	µg/L	1
Lead-Dissolved	µg/L	<1
Zinc-Dissolved	µg/L	6

Method ID	Methodology Summary
Metals-022	Determination of various metals by ICP-MS.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.

QUALITY CONTROL: PAHs in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			28/05/2018					28/05/2018	
Date analysed	-			28/05/2018					28/05/2018	
Naphthalene	µg/L	1	Org-012	<1					102	
Acenaphthylene	µg/L	1	Org-012	<1						
Acenaphthene	µg/L	1	Org-012	<1						
Fluorene	µg/L	1	Org-012	<1					116	
Phenanthrene	µg/L	1	Org-012	<1					115	
Anthracene	µg/L	1	Org-012	<1						
Fluoranthene	µg/L	1	Org-012	<1					125	
Pyrene	µg/L	1	Org-012	<1					124	
Benzo(a)anthracene	µg/L	1	Org-012	<1						
Chrysene	µg/L	1	Org-012	<1					122	
Benzo(b,j+k)fluoranthene	µg/L	2	Org-012	<2						
Benzo(a)pyrene	µg/L	1	Org-012	<1					128	
Indeno(1,2,3-c,d)pyrene	µg/L	1	Org-012	<1						
Dibenzo(a,h)anthracene	µg/L	1	Org-012	<1						
Benzo(g,h,i)perylene	µg/L	1	Org-012	<1						
Surrogate p-Terphenyl-d14	%		Org-012	115					98	

Client Reference: WD 0478 A

QUALITY CONTROL: HM in water - dissolved					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date prepared	-			28/05/2018					28/05/2018	
Date analysed	-			28/05/2018					28/05/2018	
Aluminium-Dissolved	µg/L	10	Metals-022	<10					106	
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1					107	
Copper-Dissolved	µg/L	1	Metals-022	<1					100	
Nickel-Dissolved	µg/L	1	Metals-022	<1					101	
Lead-Dissolved	µg/L	1	Metals-022	<1					104	
Zinc-Dissolved	µg/L	1	Metals-022	<1					101	

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Report Comments

Dissolved Metals: no preserved sample was received, therefore the unpreserved sample was filtered through 0.45 µm filter at the lab.
Note: there is a possibility some elements may be underestimated.