



CERTIFICATE OF ANALYSIS

Work Order : **EW1600496**
Client : **WOLLONGONG CITY COUNCIL**
Contact : **MR WAYDE PETERSON**
Address : **41 BURELLI STREET**
WOLLONGONG NSW, AUSTRALIA 2500

E-mail : **wpeterson@wollongong.nsw.gov.au**
Telephone : **+61 02 4227 7111**
Facsimile : **+61 02 4227 7277**
Project : **Whytes Gully Stage 3 Bores Quarterly**
Order number : **3044522**
C-O-C number : **----**
Sampler : **Craig Wilson**
Site : **----**

Quote number : **----**

Page : **1 of 6**
Laboratory : **Environmental Division NSW South Coast**
Contact : **Glenn Davies**
Address : **1/19 Ralph Black Dr, North Wollongong 2500**
4/13 Geary Pl, North Nowra 2541
Australia
E-mail : **glenn.davies@alsglobal.com**
Telephone : **02 42253125**
Facsimile : **W 02 42253128 N 02 44232083**
QC Level : **NEPM 2013 B3 & ALS QC Standard**
Date Samples Received : **05-Feb-2016 14:00**
Date Analysis Commenced : **05-Feb-2016**
Issue Date : **12-Feb-2016 14:35**

No. of samples received : **17**

No. of samples analysed : **17**

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results



NATA Accredited Laboratory 825

Accredited for compliance with
ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories

Position

Accreditation Category

Ankit Joshi

Inorganic Chemist

Sydney Inorganics, Smithfield, NSW

Glenn Davies

Environmental Services Representative

Laboratory - Wollongong

Shobhna Chandra

Metals Coordinator

Sydney Inorganics, Smithfield, NSW



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

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

∅ = ALS is not NATA accredited for these tests.

- TDS by method EA-015 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
-



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GMW102 (Point 9)	GMW103 (Point 10)	GMW104 (Point 11)	GMW105 (Point 12)	GMW106 (Point 13)
Client sampling date / time				05-Feb-2016 11:30	05-Feb-2016 11:40	05-Feb-2016 11:15	05-Feb-2016 11:50	05-Feb-2016 11:45	
Compound	CAS Number	LOR	Unit	EW1600496-001	EW1600496-002	EW1600496-003	EW1600496-004	EW1600496-005	
				Result	Result	Result	Result	Result	
EA005FD: Field pH									
pH	----	0.1	pH Unit	6.6	7.0	7.4	5.9	----	
EA010FD: Field Conductivity									
Electrical Conductivity (Non Compensated)	----	1	µS/cm	288	2330	944	220	----	
EA015: Total Dissolved Solids									
Total Dissolved Solids @180°C	----	10	mg/L	222	1480	408	341	----	
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	100	442	233	44	----	
Total Alkalinity as CaCO3	----	1	mg/L	100	442	233	44	----	
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	11	120	38	16	----	
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L	15	378	42	18	----	
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L	21	184	36	5	----	
Magnesium	7439-95-4	1	mg/L	7	64	23	2	----	
Sodium	7440-23-5	1	mg/L	21	173	81	30	----	
Potassium	7440-09-7	1	mg/L	<1	<1	<1	<1	----	
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----	
EN67 PK: Field Tests									
Field Observations	----	0.01	--	----	----	----	----	DRY	
EP005: Total Organic Carbon (TOC)									
Total Organic Carbon	----	1	mg/L	2	1	1	2	----	
FWI-EN/001: Groundwater Sampling - Depth									
Depth	----	0.01	m	2.60	7.40	7.43	10.5	----	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GMW108S (Point 14)	GMW108D (Point 15)	GMW109S (Point 16)	GMW109D (Point 19)	GMW110 (Point 17)
Client sampling date / time				05-Feb-2016 12:15	05-Feb-2016 12:20	05-Feb-2016 12:35	05-Feb-2016 12:38	05-Feb-2016 12:45	
Compound	CAS Number	LOR	Unit	EW1600496-006	EW1600496-007	EW1600496-008	EW1600496-009	EW1600496-010	
				Result	Result	Result	Result	Result	
EA005FD: Field pH									
pH	----	0.1	pH Unit	7.0	7.0	6.4	7.2	6.9	
EA010FD: Field Conductivity									
Electrical Conductivity (Non Compensated)	----	1	µS/cm	864	3200	1310	1740	4160	
EA015: Total Dissolved Solids									
Total Dissolved Solids @180°C	----	10	mg/L	563	1950	728	1090	2650	
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	406	486	230	238	616	
Total Alkalinity as CaCO3	----	1	mg/L	406	486	230	238	616	
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	19	192	74	26	303	
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L	38	637	240	414	815	
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L	48	124	64	91	198	
Magnesium	7439-95-4	1	mg/L	21	87	39	47	151	
Sodium	7440-23-5	1	mg/L	124	403	152	180	451	
Potassium	7440-09-7	1	mg/L	4	1	2	1	2	
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L	0.04	<0.01	0.66	<0.01	<0.01	
EN67 PK: Field Tests									
Field Observations	----	0.01	--	----	----	----	----	----	
EP005: Total Organic Carbon (TOC)									
Total Organic Carbon	----	1	mg/L	9	2	7	<1	<1	
FWI-EN/001: Groundwater Sampling - Depth									
Depth	----	0.01	m	2.44	1.95	2.97	2.74	3.98	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GMW111 (Point 18)	GABH01 (Point 2)	GABH02 (Point 5)	GABH03 (Point 6)	GABH06S (Point 7)
Client sampling date / time				05-Feb-2016 12:40	05-Feb-2016 10:30	05-Feb-2016 10:40	05-Feb-2016 11:05	05-Feb-2016 10:50	
Compound	CAS Number	LOR	Unit	EW1600496-011	EW1600496-012	EW1600496-013	EW1600496-014	EW1600496-015	
				Result	Result	Result	Result	Result	
EA005FD: Field pH									
pH	----	0.1	pH Unit	7.0	----	6.6	6.9	7.2	
EA010FD: Field Conductivity									
Electrical Conductivity (Non Compensated)	----	1	µS/cm	2550	----	5550	5540	3040	
EA015: Total Dissolved Solids									
Total Dissolved Solids @180°C	----	10	mg/L	1760	----	3490	3880	1810	
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	<1	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	<1	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	502	----	1100	729	423	
Total Alkalinity as CaCO3	----	1	mg/L	502	----	1100	729	423	
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	140	----	168	194	210	
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L	543	----	1060	1180	590	
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L	110	----	302	376	89	
Magnesium	7439-95-4	1	mg/L	86	----	188	214	78	
Sodium	7440-23-5	1	mg/L	373	----	575	500	459	
Potassium	7440-09-7	1	mg/L	1	----	3	2	<1	
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L	<0.01	----	<0.01	0.02	<0.01	
EN67 PK: Field Tests									
Field Observations	----	0.01	--	----	DESTROYED	----	----	----	
EP005: Total Organic Carbon (TOC)									
Total Organic Carbon	----	1	mg/L	2	----	5	4	2	
FWI-EN/001: Groundwater Sampling - Depth									
Depth	----	0.01	m	6.27	----	4.89	0.39	2.20	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID		GABH06D (Point 8)	BH6 (Point 20)	----	----	----
Client sampling date / time				05-Feb-2016 10:45	05-Feb-2016 12:25	----	----	----	----	----
Compound	CAS Number	LOR	Unit	EW1600496-016	EW1600496-017	-----	-----	-----	-----	-----
				Result	Result	Result	Result	Result	Result	Result
EA005FD: Field pH										
pH	----	0.1	pH Unit	6.8	7.0	----	----	----	----	----
EA010FD: Field Conductivity										
Electrical Conductivity (Non Compensated)	----	1	µS/cm	2820	4160	----	----	----	----	----
EA015: Total Dissolved Solids										
Total Dissolved Solids @180°C	----	10	mg/L	1730	2880	----	----	----	----	----
ED037P: Alkalinity by PC Titrator										
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	355	697	----	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	355	697	----	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA										
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	164	276	----	----	----	----	----
ED045G: Chloride by Discrete Analyser										
Chloride	16887-00-6	1	mg/L	584	953	----	----	----	----	----
ED093F: Dissolved Major Cations										
Calcium	7440-70-2	1	mg/L	107	120	----	----	----	----	----
Magnesium	7439-95-4	1	mg/L	62	121	----	----	----	----	----
Sodium	7440-23-5	1	mg/L	408	728	----	----	----	----	----
Potassium	7440-09-7	1	mg/L	1	<1	----	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser										
Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.07	----	----	----	----	----
EN67 PK: Field Tests										
Field Observations	----	0.01	--	----	----	----	----	----	----	----
EP005: Total Organic Carbon (TOC)										
Total Organic Carbon	----	1	mg/L	<1	3	----	----	----	----	----
FWI-EN/001: Groundwater Sampling - Depth										
Depth	----	0.01	m	1.64	1.24	----	----	----	----	----



CERTIFICATE OF ANALYSIS

Work Order : **EW1600497**
Client : **WOLLONGONG CITY COUNCIL**
Contact : **MR WAYDE PETERSON**
Address : **41 BURELLI STREET**
WOLLONGONG NSW, AUSTRALIA 2500

E-mail : **wpeterson@wollongong.nsw.gov.au**
Telephone : **+61 02 4227 7111**
Facsimile : **+61 02 4227 7277**
Project : **Whytes Gully Stage 3 Bores Annual**
Order number : **3044522**
C-O-C number : **----**
Sampler : **Craig Wilson**
Site : **----**

Quote number : **----**

Page : **1 of 18**
Laboratory : **Environmental Division NSW South Coast**
Contact : **Glenn Davies**
Address : **1/19 Ralph Black Dr, North Wollongong 2500**
4/13 Geary Pl, North Nowra 2541
Australia
E-mail : **glenn.davies@alsglobal.com**
Telephone : **02 42253125**
Facsimile : **W 02 42253128 N 02 44232083**
QC Level : **NEPM 2013 B3 & ALS QC Standard**
Date Samples Received : **05-Feb-2016 14:10**
Date Analysis Commenced : **05-Feb-2016**
Issue Date : **17-Feb-2016 16:35**

No. of samples received : **17**
No. of samples analysed : **17**

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results



NATA Accredited Laboratory 825
Accredited for compliance with
ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Dian Dao		Sydney Inorganics, Smithfield, NSW
Kristy Boje	Laboratory Supervisor	Laboratory - Wollongong
Pabi Subba	Senior Organic Chemist	Sydney Organics, Smithfield, NSW
Shobhna Chandra	Metals Coordinator	Sydney Inorganics, Smithfield, NSW



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

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

∅ = ALS is not NATA accredited for these tests.

- EG050G: LOR raised for Hexavalent Chromium analysis on sample no:2, due to matrix interferences.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GMW102 (Point 9)	GMW103 (Point 10)	GMW104 (Point 11)	GMW105 (Point 12)	GMW106 (Point 13)
Client sampling date / time				05-Feb-2016 11:30	05-Feb-2016 11:40	05-Feb-2016 11:15	05-Feb-2016 11:50	05-Feb-2016 11:45	
Compound	CAS Number	LOR	Unit	EW1600497-001	EW1600497-002	EW1600497-003	EW1600497-004	EW1600497-005	
				Result	Result	Result	Result	Result	
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L	3.77	4.61	5.22	36.7	----	
Arsenic	7440-38-2	0.001	mg/L	<0.001	0.001	<0.001	0.002	----	
Barium	7440-39-3	0.001	mg/L	0.028	0.042	0.025	0.127	----	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0001	<0.0001	<0.0001	----	
Cobalt	7440-48-4	0.001	mg/L	<0.001	0.006	0.004	0.014	----	
Chromium	7440-47-3	0.001	mg/L	<0.001	0.006	0.004	0.023	----	
Copper	7440-50-8	0.001	mg/L	0.010	0.080	0.018	0.059	----	
Manganese	7439-96-5	0.001	mg/L	0.028	0.336	0.413	0.676	----	
Lead	7439-92-1	0.001	mg/L	0.002	0.009	0.005	0.020	----	
Zinc	7440-66-6	0.005	mg/L	0.017	0.081	0.025	0.077	----	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----	
EG050T: Total Hexavalent Chromium									
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.05	<0.01	<0.01	----	
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L	0.2	0.4	0.7	0.3	----	
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----	
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L	0.26	0.13	0.02	0.84	----	
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L	0.26	0.13	0.02	0.84	----	
EN67 PK: Field Tests									
Field Observations	----	0.01	--	----	----	----	----	DRY	
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	0.05	mg/L	<0.05	<0.05	<0.05	<0.05	----	
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GMW102 (Point 9)	GMW103 (Point 10)	GMW104 (Point 11)	GMW105 (Point 12)	GMW106 (Point 13)
Client sampling date / time				05-Feb-2016 11:30	05-Feb-2016 11:40	05-Feb-2016 11:15	05-Feb-2016 11:50	05-Feb-2016 11:45	
Compound	CAS Number	LOR	Unit	EW1600497-001	EW1600497-002	EW1600497-003	EW1600497-004	EW1600497-005	
				Result	Result	Result	Result	Result	
EP068A: Organochlorine Pesticides (OC) - Continued									
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
4,4'-DDT	50-29-3	2	µg/L	<2.0	<2.0	<2.0	<2.0	----	
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Methoxychlor	72-43-5	2	µg/L	<2.0	<2.0	<2.0	<2.0	----	
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Monocrotophos	6923-22-4	2	µg/L	<2.0	<2.0	<2.0	<2.0	----	
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Parathion-methyl	298-00-0	2	µg/L	<2.0	<2.0	<2.0	<2.0	----	
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Parathion	56-38-2	2	µg/L	<2.0	<2.0	<2.0	<2.0	----	
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GMW102 (Point 9)	GMW103 (Point 10)	GMW104 (Point 11)	GMW105 (Point 12)	GMW106 (Point 13)
Client sampling date / time				05-Feb-2016 11:30	05-Feb-2016 11:40	05-Feb-2016 11:15	05-Feb-2016 11:50	05-Feb-2016 11:45	
Compound	CAS Number	LOR	Unit	EW1600497-001	EW1600497-002	EW1600497-003	EW1600497-004	EW1600497-005	
				Result	Result	Result	Result	Result	
EP068B: Organophosphorus Pesticides (OP) - Continued									
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	----	
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	----	
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	----	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	----	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	----	
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	----	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GMW102 (Point 9)	GMW103 (Point 10)	GMW104 (Point 11)	GMW105 (Point 12)	GMW106 (Point 13)
Client sampling date / time				05-Feb-2016 11:30	05-Feb-2016 11:40	05-Feb-2016 11:15	05-Feb-2016 11:50	05-Feb-2016 11:45	
Compound	CAS Number	LOR	Unit	EW1600497-001	EW1600497-002	EW1600497-003	EW1600497-004	EW1600497-005	
				Result	Result	Result	Result	Result	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	----	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	----	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	----	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	----	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	----	
EP080: BTEXN									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	----	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	----	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	----	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	----	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	----	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	----	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	----	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	----	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%	88.0	92.6	61.7	88.1	----	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%	97.6	110	80.5	110	----	
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%	26.9	32.4	23.3	30.4	----	
2-Chlorophenol-D4	93951-73-6	1	%	55.2	62.1	46.9	60.3	----	
2,4,6-Tribromophenol	118-79-6	1	%	63.0	69.1	45.1	64.2	----	
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%	79.2	89.8	68.0	82.8	----	
Anthracene-d10	1719-06-8	1	%	89.4	96.4	81.3	89.5	----	
4-Terphenyl-d14	1718-51-0	1	%	75.0	76.1	62.7	75.6	----	
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%	91.3	85.9	90.1	109	----	
Toluene-D8	2037-26-5	2	%	113	104	106	123	----	
4-Bromofluorobenzene	460-00-4	2	%	118	110	112	124	----	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GMW108S (Point 14)	GMW108D (Point 15)	GMW109S (Point 16)	GMW109D (Point 19)	GMW110 (Point 17)
Client sampling date / time				05-Feb-2016 12:15	05-Feb-2016 12:20	05-Feb-2016 12:35	05-Feb-2016 12:38	05-Feb-2016 12:45	
Compound	CAS Number	LOR	Unit	EW1600497-006	EW1600497-007	EW1600497-008	EW1600497-009	EW1600497-010	
				Result	Result	Result	Result	Result	
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L	8.20	0.25	10.3	0.04	13.7	
Arsenic	7440-38-2	0.001	mg/L	0.002	<0.001	0.006	<0.001	0.002	
Barium	7440-39-3	0.001	mg/L	0.113	0.015	0.311	0.134	0.041	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0006	<0.0001	<0.0001	
Cobalt	7440-48-4	0.001	mg/L	0.007	<0.001	0.048	<0.001	0.013	
Chromium	7440-47-3	0.001	mg/L	0.007	<0.001	0.012	<0.001	0.013	
Copper	7440-50-8	0.001	mg/L	0.025	0.018	0.045	0.004	0.024	
Manganese	7439-96-5	0.001	mg/L	0.624	0.011	3.22	0.030	0.524	
Lead	7439-92-1	0.001	mg/L	0.007	<0.001	0.021	<0.001	0.011	
Zinc	7440-66-6	0.005	mg/L	0.034	0.015	0.178	0.006	0.047	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
EG050T: Total Hexavalent Chromium									
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L	0.3	0.7	0.1	0.4	0.4	
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L	0.02	0.06	0.04	0.19	0.16	
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L	0.02	0.06	0.04	0.19	0.16	
EN67 PK: Field Tests									
Field Observations	----	0.01	--	----	----	----	----	----	
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	0.05	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	



Analytical Results

Sub-Matrix: WATER
 (Matrix: WATER)

Client sample ID

				GMW108S (Point 14)	GMW108D (Point 15)	GMW109S (Point 16)	GMW109D (Point 19)	GMW110 (Point 17)
Client sampling date / time				05-Feb-2016 12:15	05-Feb-2016 12:20	05-Feb-2016 12:35	05-Feb-2016 12:38	05-Feb-2016 12:45
Compound	CAS Number	LOR	Unit	EW1600497-006	EW1600497-007	EW1600497-008	EW1600497-009	EW1600497-010
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
4,4'-DDT	50-29-3	2	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Methoxychlor	72-43-5	2	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Monocrotophos	6923-22-4	2	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion-methyl	298-00-0	2	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion	56-38-2	2	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GMW108S (Point 14)	GMW108D (Point 15)	GMW109S (Point 16)	GMW109D (Point 19)	GMW110 (Point 17)
Client sampling date / time				05-Feb-2016 12:15	05-Feb-2016 12:20	05-Feb-2016 12:35	05-Feb-2016 12:38	05-Feb-2016 12:45	
Compound	CAS Number	LOR	Unit	EW1600497-006	EW1600497-007	EW1600497-008	EW1600497-009	EW1600497-010	
				Result	Result	Result	Result	Result	
EP068B: Organophosphorus Pesticides (OP) - Continued									
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	100	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GMW108S (Point 14)	GMW108D (Point 15)	GMW109S (Point 16)	GMW109D (Point 19)	GMW110 (Point 17)
Client sampling date / time				05-Feb-2016 12:15	05-Feb-2016 12:20	05-Feb-2016 12:35	05-Feb-2016 12:38	05-Feb-2016 12:45	
Compound	CAS Number	LOR	Unit	EW1600497-006	EW1600497-007	EW1600497-008	EW1600497-009	EW1600497-010	
				Result	Result	Result	Result	Result	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100	
EP080: BTEXN									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%	97.0	93.5	99.1	86.6	88.0	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%	123	112	104	103	106	
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%	27.9	29.3	34.0	31.2	32.1	
2-Chlorophenol-D4	93951-73-6	1	%	55.0	57.9	65.6	59.2	61.1	
2,4,6-Tribromophenol	118-79-6	1	%	73.0	62.2	73.0	62.6	71.9	
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%	85.2	88.7	90.4	81.7	93.1	
Anthracene-d10	1719-06-8	1	%	98.1	93.7	91.1	90.5	91.4	
4-Terphenyl-d14	1718-51-0	1	%	82.6	76.0	74.4	73.7	70.2	
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%	95.8	95.0	91.8	86.8	111	
Toluene-D8	2037-26-5	2	%	116	114	108	104	115	
4-Bromofluorobenzene	460-00-4	2	%	123	117	116	110	107	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GMW111 (Point 18)	GABH01 (Point 2)	GABH02 (Point 5)	GABH03 (Point 6)	GABH06S (Point 7)
Client sampling date / time				05-Feb-2016 12:40	05-Feb-2016 10:30	05-Feb-2016 10:40	05-Feb-2016 11:05	05-Feb-2016 10:50	
Compound	CAS Number	LOR	Unit	EW1600497-011	EW1600497-012	EW1600497-013	EW1600497-014	EW1600497-015	
				Result	Result	Result	Result	Result	
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L	20.8	----	2.51	0.08	0.38	
Arsenic	7440-38-2	0.001	mg/L	0.006	----	<0.001	<0.001	<0.001	
Barium	7440-39-3	0.001	mg/L	0.103	----	0.010	0.014	0.090	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	<0.0001	0.0001	0.0002	
Cobalt	7440-48-4	0.001	mg/L	0.017	----	<0.001	0.003	0.002	
Chromium	7440-47-3	0.001	mg/L	0.010	----	0.002	<0.001	<0.001	
Copper	7440-50-8	0.001	mg/L	0.045	----	0.007	0.009	0.010	
Manganese	7439-96-5	0.001	mg/L	0.755	----	0.050	0.428	0.178	
Lead	7439-92-1	0.001	mg/L	0.023	----	0.002	<0.001	0.003	
Zinc	7440-66-6	0.005	mg/L	0.070	----	0.017	0.015	0.031	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	<0.0001	<0.0001	<0.0001	
EG050T: Total Hexavalent Chromium									
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	----	<0.01	<0.01	<0.01	
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L	0.5	----	0.6	0.5	0.9	
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	----	<0.01	<0.01	<0.01	
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	----	<0.01	<0.01	0.01	
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	----	<0.01	<0.01	0.01	
EN67 PK: Field Tests									
Field Observations	----	0.01	--	----	DESTROYED	----	----	----	
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	0.05	mg/L	<0.05	----	<0.05	<0.05	<0.05	
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5	
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5	
beta-BHC	319-85-7	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5	
gamma-BHC	58-89-9	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5	
delta-BHC	319-86-8	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5	
Heptachlor	76-44-8	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5	



Analytical Results

Sub-Matrix: WATER
 (Matrix: WATER)

Client sample ID

				GMW111 (Point 18)	GABH01 (Point 2)	GABH02 (Point 5)	GABH03 (Point 6)	GABH06S (Point 7)
Client sampling date / time				05-Feb-2016 12:40	05-Feb-2016 10:30	05-Feb-2016 10:40	05-Feb-2016 11:05	05-Feb-2016 10:50
Compound	CAS Number	LOR	Unit	EW1600497-011	EW1600497-012	EW1600497-013	EW1600497-014	EW1600497-015
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Aldrin	309-00-2	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
Dieldrin	60-57-1	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
Endrin	72-20-8	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
4,4'-DDT	50-29-3	2	µg/L	<2.0	----	<2.0	<2.0	<2.0
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
Methoxychlor	72-43-5	2	µg/L	<2.0	----	<2.0	<2.0	<2.0
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
Monocrotophos	6923-22-4	2	µg/L	<2.0	----	<2.0	<2.0	<2.0
Dimethoate	60-51-5	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
Diazinon	333-41-5	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
Parathion-methyl	298-00-0	2	µg/L	<2.0	----	<2.0	<2.0	<2.0
Malathion	121-75-5	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
Fenthion	55-38-9	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
Parathion	56-38-2	2	µg/L	<2.0	----	<2.0	<2.0	<2.0
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GMW111 (Point 18)	GABH01 (Point 2)	GABH02 (Point 5)	GABH03 (Point 6)	GABH06S (Point 7)
Client sampling date / time				05-Feb-2016 12:40	05-Feb-2016 10:30	05-Feb-2016 10:40	05-Feb-2016 11:05	05-Feb-2016 10:50	
Compound	CAS Number	LOR	Unit	EW1600497-011	EW1600497-012	EW1600497-013	EW1600497-014	EW1600497-015	
				Result	Result	Result	Result	Result	
EP068B: Organophosphorus Pesticides (OP) - Continued									
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5	
Prothiofos	34643-46-4	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5	
Ethion	563-12-2	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5	
Carbophenothion	786-19-6	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5	
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1	µg/L	<1.0	----	<1.0	<1.0	<1.0	
Acenaphthylene	208-96-8	1	µg/L	<1.0	----	<1.0	<1.0	<1.0	
Acenaphthene	83-32-9	1	µg/L	<1.0	----	<1.0	<1.0	<1.0	
Fluorene	86-73-7	1	µg/L	<1.0	----	<1.0	<1.0	<1.0	
Phenanthrene	85-01-8	1	µg/L	<1.0	----	<1.0	<1.0	<1.0	
Anthracene	120-12-7	1	µg/L	<1.0	----	<1.0	<1.0	<1.0	
Fluoranthene	206-44-0	1	µg/L	<1.0	----	<1.0	<1.0	<1.0	
Pyrene	129-00-0	1	µg/L	<1.0	----	<1.0	<1.0	<1.0	
Benz(a)anthracene	56-55-3	1	µg/L	<1.0	----	<1.0	<1.0	<1.0	
Chrysene	218-01-9	1	µg/L	<1.0	----	<1.0	<1.0	<1.0	
Benzo(b+j)fluoranthene	205-99-2	1	µg/L	<1.0	----	<1.0	<1.0	<1.0	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	----	<1.0	<1.0	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	----	<1.0	<1.0	<1.0	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	----	<1.0	<1.0	<1.0	
Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	----	<1.0	<1.0	<1.0	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	<0.5	<0.5	<0.5	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L	<20	----	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	----	<50	<50	<50	
C15 - C28 Fraction	----	100	µg/L	100	----	<100	<100	<100	
C29 - C36 Fraction	----	50	µg/L	90	----	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	190	----	<50	<50	<50	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	----	<20	<20	<20	
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	----	<20	<20	<20	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GMW111 (Point 18)	GABH01 (Point 2)	GABH02 (Point 5)	GABH03 (Point 6)	GABH06S (Point 7)
Client sampling date / time				05-Feb-2016 12:40	05-Feb-2016 10:30	05-Feb-2016 10:40	05-Feb-2016 11:05	05-Feb-2016 10:50	
Compound	CAS Number	LOR	Unit	EW1600497-011	EW1600497-012	EW1600497-013	EW1600497-014	EW1600497-015	
				Result	Result	Result	Result	Result	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
>C10 - C16 Fraction	----	100	µg/L	<100	----	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	160	----	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	----	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	160	----	<100	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	<100	<100	<100	
EP080: BTEXN									
Benzene	71-43-2	1	µg/L	<1	----	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	----	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	----	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	----	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	----	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	----	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	----	<5	<5	<5	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%	107	----	93.2	93.1	84.1	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%	113	----	110	112	114	
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%	36.3	----	32.1	34.9	35.3	
2-Chlorophenol-D4	93951-73-6	1	%	64.2	----	58.9	67.4	60.8	
2,4,6-Tribromophenol	118-79-6	1	%	75.8	----	66.5	73.1	60.1	
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%	83.6	----	75.9	83.9	84.1	
Anthracene-d10	1719-06-8	1	%	103	----	89.5	96.8	84.7	
4-Terphenyl-d14	1718-51-0	1	%	72.4	----	63.7	72.8	65.7	
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%	94.4	----	93.1	98.7	96.1	
Toluene-D8	2037-26-5	2	%	111	----	112	119	115	
4-Bromofluorobenzene	460-00-4	2	%	116	----	117	122	117	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GABH06D (Point 8)	BH6 (Point 20)	----	----	----
Client sampling date / time				05-Feb-2016 10:45	05-Feb-2016 12:25	----	----	----	
Compound	CAS Number	LOR	Unit	EW1600497-016	EW1600497-017	-----	-----	-----	
				Result	Result	Result	Result	Result	
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L	0.06	0.58	----	----	----	
Arsenic	7440-38-2	0.001	mg/L	<0.001	0.002	----	----	----	
Barium	7440-39-3	0.001	mg/L	0.005	0.056	----	----	----	
Cadmium	7440-43-9	0.0001	mg/L	0.0004	<0.0001	----	----	----	
Cobalt	7440-48-4	0.001	mg/L	<0.001	0.012	----	----	----	
Chromium	7440-47-3	0.001	mg/L	<0.001	0.001	----	----	----	
Copper	7440-50-8	0.001	mg/L	0.004	0.014	----	----	----	
Manganese	7439-96-5	0.001	mg/L	0.005	1.70	----	----	----	
Lead	7439-92-1	0.001	mg/L	<0.001	0.004	----	----	----	
Zinc	7440-66-6	0.005	mg/L	0.013	0.024	----	----	----	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----	
EG050T: Total Hexavalent Chromium									
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	----	----	----	
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L	0.5	0.8	----	----	----	
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	----	----	----	
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	0.07	----	----	----	
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.07	----	----	----	
EN67 PK: Field Tests									
Field Observations	----	0.01	--	----	----	----	----	----	
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	0.05	mg/L	<0.05	<0.05	----	----	----	
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	----	----	----	
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	----	----	----	
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	----	----	----	
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	----	----	----	
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	----	----	----	
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	----	----	----	



Analytical Results

Sub-Matrix: WATER
 (Matrix: WATER)

Client sample ID

				GABH06D (Point 8)	BH6 (Point 20)	----	----	----
Client sampling date / time				05-Feb-2016 10:45	05-Feb-2016 12:25	----	----	----
Compound	CAS Number	LOR	Unit	EW1600497-016	EW1600497-017	-----	-----	-----
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	----	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	----	----	----
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	----	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	----	----	----
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	----	----	----
4,4'-DDT	50-29-3	2	µg/L	<2.0	<2.0	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	----	----	----
Methoxychlor	72-43-5	2	µg/L	<2.0	<2.0	----	----	----
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.5	µg/L	<0.5	<0.5	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	----	----	----
Monocrotophos	6923-22-4	2	µg/L	<2.0	<2.0	----	----	----
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	----	----	----
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	----	----	----
Parathion-methyl	298-00-0	2	µg/L	<2.0	<2.0	----	----	----
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	----	----	----
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	----	----	----
Parathion	56-38-2	2	µg/L	<2.0	<2.0	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	----	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GABH06D (Point 8)	BH6 (Point 20)	----	----	----
Client sampling date / time					05-Feb-2016 10:45	05-Feb-2016 12:25	----	----	----
Compound	CAS Number	LOR	Unit	EW1600497-016	EW1600497-017	-----	-----	-----	
				Result	Result	Result	Result	Result	
EP068B: Organophosphorus Pesticides (OP) - Continued									
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	----	----	----	
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	----	----	----	
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	----	----	----	
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	----	----	----	
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	----	----	----	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	----	----	----	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	----	----	----	
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	----	----	----	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	----	----	----	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	----	----	----	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	----	----	----	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	----	----	----	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	----	----	----	
Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	----	----	----	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	----	----	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	----	----	----	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	----	----	----	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	----	----	----	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	----	----	----	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	----	----	----	
Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	<1.0	----	----	----	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	----	----	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	----	----	----	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L	<20	<20	----	----	----	
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	----	----	
C15 - C28 Fraction	----	100	µg/L	<100	<100	----	----	----	
C29 - C36 Fraction	----	50	µg/L	<50	<50	----	----	----	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	----	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	----	----	----	
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	----	----	----	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GABH06D (Point 8)	BH6 (Point 20)	----	----	----
Client sampling date / time				05-Feb-2016 10:45	05-Feb-2016 12:25	----	----	----	
Compound	CAS Number	LOR	Unit	EW1600497-016	EW1600497-017	-----	-----	-----	
				Result	Result	Result	Result	Result	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
>C10 - C16 Fraction	----	100	µg/L	<100	<100	----	----	----	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	----	----	----	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	----	----	----	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	----	----	----	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	----	----	----	
EP080: BTEXN									
Benzene	71-43-2	1	µg/L	<1	<1	----	----	----	
Toluene	108-88-3	2	µg/L	<2	<2	----	----	----	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	----	----	----	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	----	----	----	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	----	----	----	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	----	----	----	
^ Sum of BTEX	----	1	µg/L	<1	<1	----	----	----	
Naphthalene	91-20-3	5	µg/L	<5	<5	----	----	----	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%	101	94.8	----	----	----	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%	119	114	----	----	----	
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%	36.5	32.8	----	----	----	
2-Chlorophenol-D4	93951-73-6	1	%	68.4	63.2	----	----	----	
2,4,6-Tribromophenol	118-79-6	1	%	72.0	69.2	----	----	----	
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%	96.5	83.4	----	----	----	
Anthracene-d10	1719-06-8	1	%	107	94.2	----	----	----	
4-Terphenyl-d14	1718-51-0	1	%	75.6	67.6	----	----	----	
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%	94.2	100	----	----	----	
Toluene-D8	2037-26-5	2	%	110	116	----	----	----	
4-Bromofluorobenzene	460-00-4	2	%	115	121	----	----	----	



CERTIFICATE OF ANALYSIS

Work Order : **EW1600383**
Client : **WOLLONGONG CITY COUNCIL**
Contact : MR WAYDE PETERSON
Address : 41 BURELLI STREET
WOLLONGONG NSW, AUSTRALIA 2500

E-mail : wpeterson@wollongong.nsw.gov.au
Telephone : +61 02 4227 7111
Facsimile : +61 02 4227 7277
Project : Helensburgh Groundwater Quarterly
Order number : 3044522
C-O-C number : ----
Sampler : Craig Wilson
Site : ----

Quote number : ----

Page : 1 of 4
Laboratory : Environmental Division NSW South Coast
Contact : Glenn Davies
Address : 1/19 Ralph Black Dr, North Wollongong 2500
4/13 Geary Pl, North Nowra 2541
Australia
E-mail : glenn.davies@alsglobal.com
Telephone : 02 42253125
Facsimile : W 02 42253128 N 02 44232083
QC Level : NEPM 2013 B3 & ALS QC Standard
Date Samples Received : 02-Feb-2016 23:00
Date Analysis Commenced : 02-Feb-2016
Issue Date : 09-Feb-2016 14:22

No. of samples received : 9
No. of samples analysed : 9

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results



NATA Accredited Laboratory 825
Accredited for compliance with
ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Dian Dao		Sydney Inorganics, Smithfield, NSW
Glenn Davies	Environmental Services Representative	Laboratory - Wollongong



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

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

∅ = ALS is not NATA accredited for these tests.

- Sampling and sample data supplied by ALS Wollongong.
 - Sampling completed as per FWI-EN001 Groundwater Sampling.
 - Field tests completed on day of sampling/receipt.
-



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	BH1	BH2	BH4	BH5	BH6
Client sampling date / time				02-Feb-2016 12:05	02-Feb-2016 12:50	02-Feb-2016 13:35	02-Feb-2016 13:45	02-Feb-2016 13:25	
Compound	CAS Number	LOR	Unit	EW1600383-001	EW1600383-002	EW1600383-003	EW1600383-004	EW1600383-005	
				Result	Result	Result	Result	Result	
EA005FD: Field pH									
pH	----	0.1	pH Unit	4.5	6.3	4.3	4.0	6.5	
EA015: Total Dissolved Solids									
Total Dissolved Solids @180°C	----	1	mg/L	339	488	327	123	173	
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	4	145	<1	<1	86	
Total Alkalinity as CaCO3	----	1	mg/L	4	145	<1	<1	86	
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	116	66	96	23	16	
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L	59	134	73	36	18	
ED093T: Total Major Cations									
Calcium	7440-70-2	1	mg/L	25	12	<1	4	26	
Magnesium	7439-95-4	1	mg/L	20	7	6	5	13	
Sodium	7440-23-5	1	mg/L	40	147	91	25	18	
Potassium	7440-09-7	1	mg/L	<1	25	2	<1	2	
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L	0.13	7.34	0.42	0.02	<0.01	
EP005: Total Organic Carbon (TOC)									
Total Organic Carbon	----	1	mg/L	3	22	3	<1	9	
FWI-EN/001: Groundwater Sampling - Depth									
Depth	----	0.01	m	2.68	2.00	2.23	3.87	2.40	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	LGMB1	LGMB2	LGMB3	LGMB4	----
Client sampling date / time				02-Feb-2016 11:55	02-Feb-2016 12:10	02-Feb-2016 12:30	02-Feb-2016 12:20	----	
Compound	CAS Number	LOR	Unit	EW1600383-006	EW1600383-007	EW1600383-008	EW1600383-009	-----	
				Result	Result	Result	Result	Result	
EA005FD: Field pH									
pH	----	0.1	pH Unit	5.9	5.6	4.8	4.5	----	
EA015: Total Dissolved Solids									
Total Dissolved Solids @180°C	----	1	mg/L	358	125	73	113	----	
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	212	44	14	3	----	
Total Alkalinity as CaCO3	----	1	mg/L	212	44	14	3	----	
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	40	18	14	34	----	
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L	16	14	12	12	----	
ED093T: Total Major Cations									
Calcium	7440-70-2	1	mg/L	74	21	7	7	----	
Magnesium	7439-95-4	1	mg/L	23	5	4	3	----	
Sodium	7440-23-5	1	mg/L	24	13	9	9	----	
Potassium	7440-09-7	1	mg/L	2	3	2	22	----	
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.01	<0.01	<0.01	----	
EP005: Total Organic Carbon (TOC)									
Total Organic Carbon	----	1	mg/L	5	4	2	4	----	
FWI-EN/001: Groundwater Sampling - Depth									
Depth	----	0.01	m	2.05	2.59	2.24	2.50	----	