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17025

Accreditation No 2013

Amended Certificate of Analysis



**BUREAU
VERITAS**

Origin Energy Resources Ltd
GPO Box 148
Brisbane QLD 4001

Attention: Matt Kernke

Project 16PEBR0000776
Collected by Lexi Bryant
Client Ref: 16252997

Customer Sample ID		ORN-PW009	ORA-PW048	ORA-PW053
Sample Type		Gas	Gas	Gas
Date Sampled		10/02/2016	11/02/2016	11/02/2016
Time Sampled		1430 hr	0920 hr	1145 hr
Pressure		285 kPa	297 kPa	271 kPa
Temperature		35°C	32°C	40°C
Cylinder ID		#325	#493	#482
Test/Reference	Unit			
Dräger Tube Test ASTM D4810				
Hydrogen Sulphide (ppm v/v)*	mL/m³	< 0.10	< 0.10	< 0.10
Hydrogen Sulphide (ppm w/v)*	mg/m³	< 0.14	< 0.14	< 0.14
Dräger Tube Test				
Mercaptans (ppm v/v)*	mL/m³	< 0.10	< 0.10	< 0.10
Carbon Disulphide (ppm v/v)*	mL/m³	<1.00	<1.00	<1.00
Arsine (ppm v/v)*	mL/m³	<0.02	<0.02	<0.02
Carbonyl Sulphide (ppm v/v)*	mL/m³	<5.00	<5.00	<5.00
Radioactive Material OS-03-01				
Radon-222	Bq/m³	<52	-	87
Radon-222 Uncertainty	Bq/m³	0	-	33
GAS ANALYSIS				
Test/Reference	Unit			
Gas Analysis ASTM D 1945-03 (2010)				
Oxygen (mol %)	Mol %	<0.01	<0.01	<0.01
Nitrogen (mol %)	Mol %	3.08	2.47	2.80
Carbon Dioxide (mol %)	Mol %	0.07	0.10	0.10
Methane (mol %)	Mol %	96.85	97.43	97.10
Ethane (mol %)	Mol %	< 0.01	< 0.01	< 0.01
Propane (mol %)	Mol %	< 0.01	< 0.01	< 0.01
I-Butane (mol %)	Mol %	< 0.01	< 0.01	< 0.01
N-Butane (mol %)	Mol %	< 0.01	< 0.01	< 0.01
I-Pentane (mol %)	Mol %	< 0.01	< 0.01	< 0.01
N-Pentane (mol %)	Mol %	< 0.01	< 0.01	< 0.01
Hexanes; C-6 (mol %)	Mol %	< 0.01	< 0.01	< 0.01
Heptanes; C-7 (mol %)	Mol %	< 0.01	< 0.01	< 0.01
Octanes and higher hydrocarbons; C-8+	Mol %	< 0.01	< 0.01	< 0.01
Total	Mol %	100.00	100.00	100.00
Gas Parameters ASTM D 1945-03 (2010)				
Average Molecular Weight		16.44	16.37	16.41
Lower Flammability Limit		5.16	5.13	5.15
Upper Flammability Limit		15.49	15.40	15.45
Ratio Of Upper To Lower		3.00	3.00	3.00
Wobbe Index		48.50	48.87	48.65



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Customer Sample ID		ORN-PW009	ORA-PW048	ORA-PW053
Sample Type		Gas	Gas	Gas
Date Sampled		10/02/2016	11/02/2016	11/02/2016
Time Sampled		1430 hr	0920 hr	1145 hr
Pressure		285 kPa	297 kPa	271 kPa
Temperature		35°C	32°C	40°C
Cylinder ID		#325	#493	#482
GAS ANALYSIS				
Test/Reference	Unit			
Compressibility Factor (Z)		0.9981	0.9981	0.9981
Ideal Gas Density (Rel to Air = 1)		0.567	0.565	0.566
Real Gas Density (Rel to Air = 1)		0.568	0.566	0.567
Ideal Nett Calorific Value	MJ/m ³	32.89	33.08	32.96
Ideal Gross Calorific Value	MJ/m ³	36.53	36.74	36.61
Real Nett Calorific Value	MJ/m ³	32.95	33.14	33.03
Real Gross Calorific Value	MJ/m ³	36.60	36.81	36.68
Gross Calorific Val Water-Sat Gas	MJ/m ³	35.89	36.09	35.97
Extended Gas In-house Method GC-04				
Nitrogen	Mol %	3.08	2.47	2.80
Carbon Dioxide	Mol %	0.07	0.10	0.10
Methane (mol %)	Mol %	96.85	97.43	97.10
Ethane (mol %)	Mol %	<0.01	<0.01	<0.01
Propane	Mol %	<0.01	<0.01	<0.01
I-Butane	Mol %	<0.01	<0.01	<0.01
N-Butane	Mol %	<0.01	<0.01	<0.01
I-Pentane	Mol %	<0.01	<0.01	<0.01
N-Pentane	Mol %	<0.01	<0.01	<0.01
Hexanes; C-6	Mol %	< 0.0001	< 0.0001	< 0.0001
Benzene (mol %)	Mol %	< 0.0001	< 0.0001	< 0.0001
Cyclohexane (mol %)	Mol %	< 0.0001	< 0.0001	< 0.0001
Heptanes; C-7	Mol %	< 0.0001	< 0.0001	< 0.0001
Methylcyclohexane (mol %)	Mol %	< 0.0001	< 0.0001	< 0.0001
Toluene (mol %)	Mol %	< 0.0001	< 0.0001	< 0.0001
Octanes; C-8	Mol %	< 0.0001	< 0.0001	< 0.0001
Ethylbenzene + Xylenes (mol %)	Mol %	< 0.0001	< 0.0001	< 0.0001
Nonanes; C-9 (mol %)	Mol %	< 0.0001	< 0.0001	< 0.0001
Decanes; C-10 (mol %)	Mol %	< 0.0001	< 0.0001	< 0.0001
Undecanes; C-11 (mol %)	Mol %	< 0.0001	< 0.0001	< 0.0001
Dodecanes; C-12 (mol %)	Mol %	< 0.0001	< 0.0001	< 0.0001
Tridecanes; C-13 (mol %)	Mol %	< 0.0001	< 0.0001	< 0.0001
Tetradecanes; C-14+ (mol %)	Mol %	< 0.0001	< 0.0001	< 0.0001
SVOC Analysis				
Test/Reference	Unit			
Acenaphthene*	mg/m ³	<0.01	<0.01	<0.01
Acenaphthylene*	mg/m ³	<0.01	<0.01	<0.01
Anthracene*	mg/m ³	<0.01	<0.01	<0.01
Benzo(a)anthracene*	mg/m ³	<0.01	<0.01	<0.01
Benzo(a)pyrene*	mg/m ³	<0.01	<0.01	<0.01
Benzo(b,j,k)fluoranthene*	mg/m ³	<0.02	<0.02	<0.02
Benzo(g,h,i)perylene*	mg/m ³	<0.01	<0.01	<0.01
Chrysene*	mg/m ³	<0.01	<0.01	<0.01
Dibenzo(a,h)anthracene*	mg/m ³	<0.01	<0.01	<0.01
Fluoranthene*	mg/m ³	<0.01	<0.01	<0.01



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Customer Sample ID		ORN-PW009	ORA-PW048	ORA-PW053
Sample Type		Gas	Gas	Gas
Date Sampled		10/02/2016	11/02/2016	11/02/2016
Time Sampled		1430 hr	0920 hr	1145 hr
Pressure		285 kPa	297 kPa	271 kPa
Temperature		35°C	32°C	40°C
Cylinder ID		#325	#493	#482
SVOC Analysis				
Test/Reference	Unit			
Fluorene*	mg/m ³	<0.01	<0.01	<0.01
Indeno(123-cd)pyrene*	mg/m ³	<0.01	<0.01	<0.01
Naphthalene*	mg/m ³	<0.01	<0.01	<0.01
Phenanthrene*	mg/m ³	<0.01	<0.01	<0.01
Pyrene*	mg/m ³	<0.01	<0.01	<0.01

Customer Sample ID		ORA-PW087	ORA-PW052	ORN-PW009
Sample Type		Gas	Gas	Water
Date Sampled		12/02/2016	12/02/2016	10/02/2016
Time Sampled		1100 hr	1410 hr	14:50 hr
Pressure		247 kPa	216 kPa	
Temperature		40°C	40°C	
Cylinder ID		#483	#400	
Description				Post Separator
Test/Reference	Unit			
Dräger Tube Test ASTM D4810				
Hydrogen Sulphide (ppm v/v)*	mL/m ³	0.1	< 0.10	-
Hydrogen Sulphide (ppm w/v)*	mg/m ³	0.14	< 0.14	-
Dräger Tube Test				
Mercaptans (ppm v/v)*	mL/m ³	< 0.10	< 0.10	-
Carbon Disulphide (ppm v/v)*	mL/m ³	<1.00	<1.00	-
Arsine (ppm v/v)*	mL/m ³	<0.02	<0.02	-
Carbonyl Sulphide (ppm v/v)*	mL/m ³	<5.00	<5.00	-
Radioactive Material OS-03-01				
Radon-222	Bq/m ³	85	41	-
Radon-222 Uncertainty	Bq/m ³	29	24	-
Field Analysis				
Field pH*		-	-	8.02
Field Temperature*	°C	-	-	24.4
Field Conductivity*	mS/cm	-	-	4.62
Dissolved Oxygen*	mg/L	-	-	1.10
GAS ANALYSIS				
Test/Reference	Unit			
Gas Analysis ASTM D 1945-03 (2010)				
Oxygen (mol %)	Mol %	<0.01	<0.01	-
Nitrogen (mol %)	Mol %	2.16	2.56	-
Carbon Dioxide (mol %)	Mol %	0.21	0.10	-
Methane (mol %)	Mol %	97.62	97.34	-
Ethane (mol %)	Mol %	0.01	< 0.01	-
Propane (mol %)	Mol %	< 0.01	< 0.01	-
I-Butane (mol %)	Mol %	< 0.01	< 0.01	-
N-Butane (mol %)	Mol %	< 0.01	< 0.01	-
I-Pentane (mol %)	Mol %	< 0.01	< 0.01	-



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Customer Sample ID		ORA-PW087	ORA-PW052	ORN-PW009
Sample Type		Gas	Gas	Water
Date Sampled		12/02/2016	12/02/2016	10/02/2016
Time Sampled		1100 hr	1410 hr	14:50 hr
Pressure		247 kPa	216 kPa	
Temperature		40°C	40°C	
Cylinder ID		#483	#400	
Description				Post Separator
GAS ANALYSIS				
Test/Reference	Unit			
N-Pentane (mol %)	Mol %	< 0.01	< 0.01	-
Hexanes; C-6 (mol %)	Mol %	< 0.01	< 0.01	-
Heptanes; C-7 (mol %)	Mol %	< 0.01	< 0.01	-
Octanes and higher hydrocarbons; C-8+	Mol %	< 0.01	< 0.01	-
Total	Mol %	100.00	100.00	-
Gas Parameters ASTM D 1945-03 (2010)				
Average Molecular Weight		16.36	16.38	-
Lower Flammability Limit		5.12	5.14	-
Upper Flammability Limit		15.36	15.41	-
Ratio Of Upper To Lower		3.00	3.00	-
Wobbe Index		48.98	48.81	-
Compressibility Factor (Z)		0.9980	0.9981	-
Ideal Gas Density (Rel to Air = 1)		0.565	0.565	-
Real Gas Density (Rel to Air = 1)		0.566	0.566	-
Ideal Nett Calorific Value	MJ/m ³	33.15	33.05	-
Ideal Gross Calorific Value	MJ/m ³	36.82	36.70	-
Real Nett Calorific Value	MJ/m ³	33.21	33.11	-
Real Gross Calorific Value	MJ/m ³	36.89	36.78	-
Gross Calorific Val Water-Sat Gas	MJ/m ³	36.17	36.06	-
Extended Gas In-house Method GC-04				
Nitrogen	Mol %	2.16	2.56	-
Carbon Dioxide	Mol %	0.21	0.10	-
Methane (mol %)	Mol %	97.62	97.34	-
Ethane (mol %)	Mol %	0.01	<0.01	-
Propane	Mol %	<0.01	<0.01	-
I-Butane	Mol %	<0.01	<0.01	-
N-Butane	Mol %	<0.01	<0.01	-
I-Pentane	Mol %	<0.01	<0.01	-
N-Pentane	Mol %	<0.01	<0.01	-
Hexanes; C-6	Mol %	< 0.0001	< 0.0001	-
Benzene (mol %)	Mol %	< 0.0001	< 0.0001	-
Cyclohexane (mol %)	Mol %	< 0.0001	< 0.0001	-
Heptanes; C-7	Mol %	< 0.0001	< 0.0001	-
Methylcyclohexane (mol %)	Mol %	< 0.0001	< 0.0001	-
Toluene (mol %)	Mol %	< 0.0001	< 0.0001	-
Octanes; C-8	Mol %	< 0.0001	< 0.0001	-
Ethylbenzene + Xylenes (mol %)	Mol %	< 0.0001	< 0.0001	-
Nonanes; C-9 (mol %)	Mol %	< 0.0001	< 0.0001	-
Decanes; C-10 (mol %)	Mol %	< 0.0001	< 0.0001	-
Undecanes; C-11 (mol %)	Mol %	< 0.0001	< 0.0001	-
Dodecanes; C-12 (mol %)	Mol %	< 0.0001	< 0.0001	-
Tridecanes; C-13 (mol %)	Mol %	< 0.0001	< 0.0001	-
Tetradecanes; C-14+ (mol %)	Mol %	< 0.0001	< 0.0001	-

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Customer Sample ID	ORA-PW087	ORA-PW052	ORN-PW009
Sample Type	Gas	Gas	Water
Date Sampled	12/02/2016	12/02/2016	10/02/2016
Time Sampled	1100 hr	1410 hr	14:50 hr
Pressure	247 kPa	216 kPa	
Temperature	40°C	40°C	
Cylinder ID	#483	#400	
Description			Post Separator
Sub Contracted			
Test/Reference	Unit		

Water Chemistry				
Symbio Alliance*	-	-	-	Attached
SVOC Analysis				
Test/Reference	Unit			
Acenaphthene*	mg/m ³	<0.01	<0.01	-
Acenaphthylene*	mg/m ³	<0.01	<0.01	-
Anthracene*	mg/m ³	<0.01	<0.01	-
Benzo(a)anthracene*	mg/m ³	<0.01	<0.01	-
Benzo(a)pyrene*	mg/m ³	<0.01	<0.01	-
Benzo(b,j,k)fluoranthene*	mg/m ³	<0.02	<0.02	-
Benzo(g,h,i)perylene*	mg/m ³	<0.01	<0.01	-
Chrysene*	mg/m ³	<0.01	<0.01	-
Dibenzo(a,h)anthracene*	mg/m ³	<0.01	<0.01	-
Fluoranthene*	mg/m ³	<0.01	<0.01	-
Fluorene*	mg/m ³	<0.01	<0.01	-
Indeno(123-cd)pyrene*	mg/m ³	<0.01	<0.01	-
Naphthalene*	mg/m ³	<0.01	<0.01	-
Phenanthrene*	mg/m ³	<0.01	<0.01	-
Pyrene*	mg/m ³	<0.01	<0.01	-

Customer Sample ID	ORA-PW089	ORA-PW048	ORA-PW053
Sample Type	Water	Water	Water
Date Sampled	10/02/2016	11/02/2016	11/02/2016
Time Sampled	16:20 hr	0845 hr	1140 hr
Description	Post Separator	Tubing	Tubing
Test/Reference	Unit		
Field Analysis			
Field pH*	8.24	7.98	8.09
Field Temperature*	°C 37.0	35.3	37.4
Field Conductivity*	mS/cm 4.89	4.02	5.67
Dissolved Oxygen*	mg/L 1.15	0.90	1.20
Sub Contracted			
Test/Reference	Unit		
Water Chemistry			
Symbio Alliance*	Attached	Attached	Attached



**BUREAU
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Customer Sample ID		ORA-PW087	ORA-PW052
Sample Type		Water	Water
Date Sampled		11/02/2016	12/02/2016
Time Sampled		1150 hr	1500 hr
Description		Tubing	Tubing
Test/Reference	Unit		
Field Analysis			
Field pH*		8.20	8.03
Field Temperature*	°C	40.0	38.7
Field Conductivity*	mS/cm	6.44	5.12
Dissolved Oxygen*	mg/L	1.14	1.67
Sub Contracted			
Test/Reference	Unit		
Water Chemistry			
Symbio Alliance*		Attached	Attached
Test Description			
Gas Parameters	The above results are calculated on an air and water free basis assuming only the measured constituents are present. The following parameters are calculated from the above composition at 15°C and 101.325 kPa (abs) using ISO 6976 and the physical constants from the GPSA SI Engineering Data Handbook 11th Ed.		
Radon-222	Measured as Radon-222 in the gas phase at 101.3 kPa abs @ 15°C.		
Dräger Tube Test	Hydrogen Sulphide results measured at 101.3 kPa abs @ 15°C.		
Test Comments			
ORN-PW009	SVOC Analysis	Sample filters and XAD sorbent tubes tested by EnviroLab/MPL using method ORG-012/017/033 (Solvent extraction and GCMS analysis)	
ORA-PW053	SVOC Analysis	Sample filters and XAD sorbent tubes tested by EnviroLab/MPL using method ORG-012/017/033 (Solvent extraction and GCMS analysis)	
ORA-PW048	SVOC Analysis	Sample filters and XAD sorbent tubes tested by EnviroLab/MPL using method ORG-012/017/033 (Solvent extraction and GCMS analysis)	
ORA-PW087	SVOC Analysis	Sample filters and XAD sorbent tubes tested by EnviroLab/MPL using method ORG-012/017/033 (Solvent extraction and GCMS analysis)	
ORA-PW052	SVOC Analysis	Sample filters and XAD sorbent tubes tested by EnviroLab/MPL using method ORG-012/017/033 (Solvent extraction and GCMS analysis)	
Authorised By			
Lexi Bryant	Chemist		
Paul Marty	Technical Manager, Petroleum Services		
Michelle Fordham	Chemist	Accreditation No 2013	
Laboratory Manager			
James Dennett	Operations Manager		

Amended Report: Test for VOC by adsorption tube removed. SVOC test comment added - Method details

This report replaces report number 889769.

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Samples will be discarded after 30 days unless otherwise notified.

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The samples were collected by Laboratory staff.

CERTIFICATE NO.: 427112
ISSUE DATE: 25/02/16

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REVISION NO: 00
 This certificate supersedes any previous revisions

CLIENT DETAILS: Lexi Bryant
 Bureau Veritas - QLD
 7 Palmer Place
 Murarrie QLD 4172

DATE RECEIVED: 15/02/2016
CLIENT REF. NO: 16PEBR0000776
ORDER NO: 16000078-498

CONDITIONS OF SAMPLE: Receipt Temp °C: 10
 Storage Temp °C: 4
TEST DATE: Sample tested between date received and reported

RESULTS OF ANALYSIS:

Test	Method Code	LOR	Unit	427112-1 ORN-PW009 10/02/16 2:50PM
Inorganics				
pH	EFF006	0.01	unit	8.45
Electrical Conductivity	EFF007	1	uS/cm	4,700
Dissolved Solids	EFF010	2	mg/L	2,800
Turbidity	EFF061	0.1	NTU	8.3
Fluoride	EFF015	0.05	mg/L	2.8
Chloride	EFF011	2	mg/L	880
Calcium (Dissolved)	EWI01	0.1	mg/L	3.2
Magnesium (Dissolved)	EWI01	0.01	mg/L	0.90
Sodium (Dissolved)	EWI01	1	mg/L	1,050
Sodium Absorption Ratio_S	EFF063	0.01		130
Potassium (Dissolved)	EWI01	0.2	mg/L	7.5
Bromide	EWMB	0.005	mg/L	2.28
Alkalinity Bicarb (CaCO3)	EFF031	1	mg/L	1,410
Alkalinity Carbonate (CaCO3)	EFF031	1	mg/L	50
Alkalinity Hydroxide(CaCO3)	EFF031	1	mg/L	<1
Alkalinity Total (CaCO3)	EFF031	1	mg/L	1,460
Alkalinity (Residual) #	EFF031		meq/L	14.98
Ammonia-Nitrogen	EFF044	0.005	mg/L	0.98



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.
 Accredited for compliance with ISO/IEC 17025.
 NATA Corporate Accreditation No.: 2455

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- Rockhampton: Unit 3, 191 Berserker St, Berserker QLD 4701
- Wagga Wagga: Unit 5, 10-12 Koorringal Rd, Wagga Wagga NSW 2650

Test	Method Code	LOR	Unit	427112-1 ORN-PW009 10/02/16 2:50PM
Formaldehyde in Water	ENV137	0.05	mg/L	<0.05
Ammonium	EFF044	0.006	mg/L	1.3
Metals				
Arsenic (Total)	EWM02	0.0005	mg/L	0.00056
Arsenic (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Barium (Total)	EWM02	0.0001	mg/L	1.1
Barium (Dissolved)	EWM01	0.0001	mg/L	1.1
Beryllium (Total)	EWM02	0.0001	mg/L	<0.0001
Beryllium (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Boron (Total)	EWM02	0.005	mg/L	0.95
Boron (Dissolved)	EWM01	0.005	mg/L	0.83
Cadmium (Total)	EWM02	0.0001	mg/L	<0.0001
Cadmium (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Chromium (Total)	EWM02	0.0005	mg/L	<0.0005
Chromium (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Cobalt (Total)	EWM02	0.0001	mg/L	<0.0001
Cobalt (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Copper (Total)	EWM02	0.0005	mg/L	0.0083
Copper (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Iron (Total)	EWM02	0.005	mg/L	0.53
Iron (Dissolved)	EWM01	0.005	mg/L	0.062
Lead (Total)	EWM02	0.0001	mg/L	0.00034
Lead (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Manganese (Total)	EWM02	0.0005	mg/L	0.0084
Manganese (Dissolved)	EWM01	0.0005	mg/L	0.0046
Molybdenum (Total)	EWM02	0.0001	mg/L	0.00070
Molybdenum (Dissolved)	EWM01	0.0001	mg/L	0.00037
Nickel (Total)	EWM02	0.0001	mg/L	<0.0001
Nickel (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Selenium (Total)	EWM02	0.0005	mg/L	<0.0005
Selenium (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Silver (Total)	EWM02	0.0001	mg/L	0.00013
Silver (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Strontium (Total)	EWM02	0.0001	mg/L	1.7
Strontium (Dissolved)	EWM01	0.0001	mg/L	1.6
Tin (Total)	EWM02	0.0005	mg/L	0.0012
Tin (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Zinc (Total)	EWM02	0.0005	mg/L	0.019
Zinc (Dissolved)	EWM01	0.0005	mg/L	<0.0005



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

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- Wagga Wagga: Unit 5, 10-12 Koorringal Rd, Wagga Wagga NSW 2650

Test	Method Code	LOR	Unit	427112-1 ORN-PW009 10/02/16 2:50PM
Mercury (Total)	EWM02	0.0001	mg/L	0.00074
Mercury (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Aluminium (Total)	EWM02	0.005	mg/L	0.099
Aluminium (Dissolved)	EWM01	0.005	mg/L	0.0075
Silicon (Dissolved)	EWI01	0.1	mg/L	9.6
Silica (from Si) #	EWI01	0.2	mg/L	20.6
Lithium (Dissolved)	EWM01	0.0001	mg/L	0.10
Lithium (Total)	EWM02	0.0001	mg/L	0.11
Uranium (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Uranium (Total)	EWM02	0.0001	mg/L	<0.0001
Vanadium (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Vanadium (Total)	EWM02	0.0001	mg/L	0.0017
Organics				
Benzene	ENV105	1	µg/L	<1
Ethylbenzene	ENV105	1	µg/L	<1
Toluene	ENV105	1	µg/L	<1
ortho-Xylenes	ENV105	1	µg/L	<1
meta- & para-Xylenes	ENV105	2	µg/L	<2.0
Xylenes - Total	ENV105	3	µg/L	<3.0
TPH C6-C9 Fraction	ENV105	10	µg/L	30
TRPH >C10-C16 Fraction	ENV102	50	µg/L	<50
TRPH >C16-C34 Fraction	ENV102	100	µg/L	<100
TRPH >C34-C40 Fraction	ENV102	100	µg/L	<100
Surrogate o-Terphenyl	ENV102		%	100
ENV103 Phenols Water/Effluent				
2,3,4,6-Tetrachlorophenol	ENV103	10	µg/L	<10
2,4,5-Trichlorophenol	ENV103	10	µg/L	<10
2,4,6-Trichlorophenol	ENV103	10	µg/L	<10
2,4-Dichlorophenol	ENV103	10	µg/L	<10
2,4-Dimethylphenol	ENV103	10	µg/L	<10
2,6-Dichlorophenol	ENV103	10	µg/L	<10
2-Chlorophenol	ENV103	10	µg/L	<10
2-Methylphenol	ENV103	10	µg/L	<10
2-Nitrophenol	ENV103	10	µg/L	<10
3 & 4-Methylphenol	ENV103	20	µg/L	<20
4-chloro-3-methylphenol	ENV103	10	µg/L	<10
Pentachlorophenol	ENV103	10	µg/L	<10
Phenol	ENV103	10	µg/L	<10



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NATA Corporate Accreditation No.: 2455

HPC Holdings Pty Ltd trading as Symbio Laboratories

ABN 93 621 286 928

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Test	Method Code	LOR	Unit	427112-1 ORN-PW009 10/02/16 2:50PM
Surrogate 2-chlorophenol-d4	ENV103		%	78
Surrogate 2-fluorophenol	ENV103		%	51
Surrogate 246-Tribromophenol	ENV103		%	79
Organics - PAH				
Naphthalene	ENV103	1	µg/L	<1
Acenaphthylene	ENV103	1	µg/L	<1
Acenaphthene	ENV103	1	µg/L	<1
Fluorene	ENV103	1	µg/L	<1
Phenanthrene	ENV103	1	µg/L	<1
Anthracene	ENV103	1	µg/L	<1
Fluoranthene	ENV103	1	µg/L	<1
Pyrene	ENV103	1	µg/L	<1
Benz(a)anthracene	ENV103	1	µg/L	<1
Chrysene	ENV103	1	µg/L	<1
Benzo(b)fluoranthene	ENV103	1	µg/L	<1
Benzo(k)fluoranthene	ENV103	1	µg/L	<1
Benzo(a)pyrene	ENV103	1	µg/L	<1
Indeno(1,2,3-cd)pyrene	ENV103	1	µg/L	<1
Dibenz(a,h)anthracene	ENV103	1	µg/L	<1
Benzo(g,h,i)perylene	ENV103	1	µg/L	<1
Surrogate Nitrobenzene-d5	ENV103		%	94
Surrogate 2-fluorobiphenyl	ENV103		%	83
Surrogate Phenanthrene-d10	ENV103		%	85
Surrog 4-terphenyl-d14	ENV103		%	91
Total Reportable PAH	ENV103	1	µg/L	<1



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DEFINITIONS: < : Less than, > : Greater than, - : Not Tested, DWB : Dry Weight Basis.

* Test not covered by NATA scope of accreditation.

: The result is derived from a calculation. Only results above the LOR are included in the calculation.

^ Test result has been provided by the client.

Results were reported on an "as received" basis unless otherwise indicated.

Sampling was conducted by the customer and results reported pertain only to the samples submitted.

Responsibility for representative sampling rests with the customer.



Betty Bi, Analyst
(Brisbane)



Jason Roumimper, Chemist
(Brisbane)



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CERTIFICATE NO.: 427112
ISSUE DATE: 25/02/16

Page 1 of 5

REVISION NO: 00
 This certificate supersedes any previous revisions

CLIENT DETAILS: Lexi Bryant
 Bureau Veritas - QLD
 7 Palmer Place
 Murarrie QLD 4172

DATE RECEIVED: 15/02/2016
CLIENT REF. NO: 16PEBR0000775
ORDER NO: 16000078-498

CONDITIONS OF SAMPLE: Receipt Temp °C: 10
 Storage Temp °C: 4
TEST DATE: Sample tested between date received and reported

RESULTS OF ANALYSIS:

Test	Method Code	LOR	Unit	427112-2 ORA-PW089 10/02/2016 4:20PM
Inorganics				
pH	EFF006	0.01	unit	8.58
Electrical Conductivity	EFF007	1	uS/cm	4,900
Dissolved Solids	EFF010	2	mg/L	2,800
Turbidity	EFF061	0.1	NTU	6.7
Fluoride	EFF015	0.05	mg/L	3.3
Chloride	EFF011	2	mg/L	800
Calcium (Dissolved)	EWI01	0.1	mg/L	2.9
Magnesium (Dissolved)	EWI01	0.01	mg/L	0.78
Sodium (Dissolved)	EWI01	1	mg/L	1,110
Sodium Absorption Ratio_S	EFF063	0.01		150
Potassium (Dissolved)	EWI01	0.2	mg/L	6.9
Bromide	EWMB	0.005	mg/L	2.80
Alkalinity Bicarb (CaCO3)	EFF031	1	mg/L	1,430
Alkalinity Carbonate (CaCO3)	EFF031	1	mg/L	76
Alkalinity Hydroxide(CaCO3)	EFF031	1	mg/L	<1
Alkalinity Total (CaCO3)	EFF031	1	mg/L	1,510
Alkalinity (Residual) #	EFF031		meq/L	15.78
Ammonia-Nitrogen	EFF044	0.005	mg/L	0.99



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Test	Method Code	LOR	Unit	427112-2 ORA-PW089 10/02/2016 4:20PM
Formaldehyde in Water	ENV137	0.05	mg/L	<0.05
Ammonium	EFF044	0.006	mg/L	1.3
Metals				
Arsenic (Total)	EWM02	0.0005	mg/L	<0.0005
Arsenic (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Barium (Total)	EWM02	0.0001	mg/L	0.97
Barium (Dissolved)	EWM01	0.0001	mg/L	0.97
Beryllium (Total)	EWM02	0.0001	mg/L	<0.0001
Beryllium (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Boron (Total)	EWM02	0.005	mg/L	0.98
Boron (Dissolved)	EWM01	0.005	mg/L	0.80
Cadmium (Total)	EWM02	0.0001	mg/L	<0.0001
Cadmium (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Chromium (Total)	EWM02	0.0005	mg/L	<0.0005
Chromium (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Cobalt (Total)	EWM02	0.0001	mg/L	<0.0001
Cobalt (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Copper (Total)	EWM02	0.0005	mg/L	0.0015
Copper (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Iron (Total)	EWM02	0.005	mg/L	0.29
Iron (Dissolved)	EWM01	0.005	mg/L	0.035
Lead (Total)	EWM02	0.0001	mg/L	0.00015
Lead (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Manganese (Total)	EWM02	0.0005	mg/L	0.0056
Manganese (Dissolved)	EWM01	0.0005	mg/L	0.0040
Molybdenum (Total)	EWM02	0.0001	mg/L	0.00033
Molybdenum (Dissolved)	EWM01	0.0001	mg/L	0.00018
Nickel (Total)	EWM02	0.0001	mg/L	<0.0001
Nickel (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Selenium (Total)	EWM02	0.0005	mg/L	<0.0005
Selenium (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Silver (Total)	EWM02	0.0001	mg/L	<0.0001
Silver (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Strontium (Total)	EWM02	0.0001	mg/L	1.5
Strontium (Dissolved)	EWM01	0.0001	mg/L	1.3
Tin (Total)	EWM02	0.0005	mg/L	<0.0005
Tin (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Zinc (Total)	EWM02	0.0005	mg/L	0.012
Zinc (Dissolved)	EWM01	0.0005	mg/L	<0.0005



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Test	Method Code	LOR	Unit	427112-2 ORA-PW089 10/02/2016 4:20PM
Mercury (Total)	EWM02	0.0001	mg/L	0.00018
Mercury (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Aluminium (Total)	EWM02	0.005	mg/L	0.073
Aluminium (Dissolved)	EWM01	0.005	mg/L	0.0081
Silicon (Dissolved)	EWI01	0.1	mg/L	11
Silica (from Si) #	EWI01	0.2	mg/L	23.6
Lithium (Dissolved)	EWM01	0.0001	mg/L	0.075
Lithium (Total)	EWM02	0.0001	mg/L	0.11
Uranium (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Uranium (Total)	EWM02	0.0001	mg/L	<0.0001
Vanadium (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Vanadium (Total)	EWM02	0.0001	mg/L	0.0017
Organics				
Benzene	ENV105	1	µg/L	<1
Ethylbenzene	ENV105	1	µg/L	<1
Toluene	ENV105	1	µg/L	<1
ortho-Xylenes	ENV105	1	µg/L	<1
meta- & para-Xylenes	ENV105	2	µg/L	<2.0
Xylenes - Total	ENV105	3	µg/L	<3.0
TPH C6-C9 Fraction	ENV105	10	µg/L	<10
TRPH >C10-C16 Fraction	ENV102	50	µg/L	<50
TRPH >C16-C34 Fraction	ENV102	100	µg/L	<100
TRPH >C34-C40 Fraction	ENV102	100	µg/L	<100
Surrogate o-Terphenyl	ENV102		%	96
ENV103 Phenols Water/Effluent				
2,3,4,6-Tetrachlorophenol	ENV103	10	µg/L	<10
2,4,5-Trichlorophenol	ENV103	10	µg/L	<10
2,4,6-Trichlorophenol	ENV103	10	µg/L	<10
2,4-Dichlorophenol	ENV103	10	µg/L	<10
2,4-Dimethylphenol	ENV103	10	µg/L	<10
2,6-Dichlorophenol	ENV103	10	µg/L	<10
2-Chlorophenol	ENV103	10	µg/L	<10
2-Methylphenol	ENV103	10	µg/L	<10
2-Nitrophenol	ENV103	10	µg/L	<10
3 & 4-Methylphenol	ENV103	20	µg/L	<20
4-chloro-3-methylphenol	ENV103	10	µg/L	<10
Pentachlorophenol	ENV103	10	µg/L	<10
Phenol	ENV103	10	µg/L	<10



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Test	Method Code	LOR	Unit	427112-2 ORA-PW089 10/02/2016 4:20PM
Surrogate 2-chlorophenol-d4	ENV103		%	78
Surrogate 2-fluorophenol	ENV103		%	52
Surrogate 246-Tribromophenol	ENV103		%	78
Organics - PAH				
Naphthalene	ENV103	1	µg/L	<1
Acenaphthylene	ENV103	1	µg/L	<1
Acenaphthene	ENV103	1	µg/L	<1
Fluorene	ENV103	1	µg/L	<1
Phenanthrene	ENV103	1	µg/L	<1
Anthracene	ENV103	1	µg/L	<1
Fluoranthene	ENV103	1	µg/L	<1
Pyrene	ENV103	1	µg/L	<1
Benz(a)anthracene	ENV103	1	µg/L	<1
Chrysene	ENV103	1	µg/L	<1
Benzo(b)fluoranthene	ENV103	1	µg/L	<1
Benzo(k)fluoranthene	ENV103	1	µg/L	<1
Benzo(a)pyrene	ENV103	1	µg/L	<1
Indeno(1,2,3-cd)pyrene	ENV103	1	µg/L	<1
Dibenz(a,h)anthracene	ENV103	1	µg/L	<1
Benzo(g,h,i)perylene	ENV103	1	µg/L	<1
Surrogate Nitrobenzene-d5	ENV103		%	97
Surrogate 2-fluorobiphenyl	ENV103		%	86
Surrogate Phenanthrene-d10	ENV103		%	84
Surrog 4-terphenyl-d14	ENV103		%	90
Total Reportable PAH	ENV103	1	µg/L	<1



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DEFINITIONS: < : Less than, > : Greater than, - : Not Tested, DWB : Dry Weight Basis.

* Test not covered by NATA scope of accreditation.

: The result is derived from a calculation. Only results above the LOR are included in the calculation.

^ Test result has been provided by the client.

Results were reported on an "as received" basis unless otherwise indicated.

Sampling was conducted by the customer and results reported pertain only to the samples submitted.

Responsibility for representative sampling rests with the customer.



Betty Bi, Analyst
(Brisbane)



Jason Roumimper, Chemist
(Brisbane)



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CERTIFICATE NO.: 427112
ISSUE DATE: 25/02/16

Page 1 of 5

REVISION NO: 00
 This certificate supersedes any previous revisions

CLIENT DETAILS: Lexi Bryant
 Bureau Veritas - QLD
 7 Palmer Place
 Murarrie QLD 4172

DATE RECEIVED: 15/02/2016
CLIENT REF. NO: 16PEBR0000776
ORDER NO: 16000078-498

CONDITIONS OF SAMPLE: Receipt Temp °C: 10
 Storage Temp °C: 4
TEST DATE: Sample tested between date received and reported

RESULTS OF ANALYSIS:

Test	Method Code	LOR	Unit	427112-3 ORA-PW048 11/02/2016 08:45AM
Inorganics				
pH	EFF006	0.01	unit	8.40
Electrical Conductivity	EFF007	1	uS/cm	3,900
Dissolved Solids	EFF010	2	mg/L	2,300
Turbidity	EFF061	0.1	NTU	24.8
Fluoride	EFF015	0.05	mg/L	3.4
Chloride	EFF011	2	mg/L	570
Calcium (Dissolved)	EWI01	0.1	mg/L	2.2
Magnesium (Dissolved)	EWI01	0.01	mg/L	0.70
Sodium (Dissolved)	EWI01	1	mg/L	900
Sodium Absorption Ratio_S	EFF063	0.01		140
Potassium (Dissolved)	EWI01	0.2	mg/L	5.5
Bromide	EWMB	0.005	mg/L	1.71
Alkalinity Bicarb (CaCO3)	EFF031	1	mg/L	1,330
Alkalinity Carbonate (CaCO3)	EFF031	1	mg/L	41
Alkalinity Hydroxide(CaCO3)	EFF031	1	mg/L	<1
Alkalinity Total (CaCO3)	EFF031	1	mg/L	1,370
Alkalinity (Residual) #	EFF031		meq/L	14.09
Ammonia-Nitrogen	EFF044	0.005	mg/L	0.69



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Test	Method Code	LOR	Unit	427112-3 ORA-PW048 11/02/2016 08:45AM
Formaldehyde in Water	ENV137	0.05	mg/L	<0.05
Ammonium	EFF044	0.006	mg/L	0.89
Metals				
Arsenic (Total)	EWM02	0.0005	mg/L	0.0010
Arsenic (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Barium (Total)	EWM02	0.0001	mg/L	0.83
Barium (Dissolved)	EWM01	0.0001	mg/L	0.68
Beryllium (Total)	EWM02	0.0001	mg/L	<0.0001
Beryllium (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Boron (Total)	EWM02	0.005	mg/L	0.79
Boron (Dissolved)	EWM01	0.005	mg/L	0.58
Cadmium (Total)	EWM02	0.0001	mg/L	<0.0001
Cadmium (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Chromium (Total)	EWM02	0.0005	mg/L	<0.0005
Chromium (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Cobalt (Total)	EWM02	0.0001	mg/L	0.0013
Cobalt (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Copper (Total)	EWM02	0.0005	mg/L	0.0037
Copper (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Iron (Total)	EWM02	0.005	mg/L	3.4
Iron (Dissolved)	EWM01	0.005	mg/L	0.059
Lead (Total)	EWM02	0.0001	mg/L	0.0017
Lead (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Manganese (Total)	EWM02	0.0005	mg/L	0.058
Manganese (Dissolved)	EWM01	0.0005	mg/L	0.0071
Molybdenum (Total)	EWM02	0.0001	mg/L	0.00049
Molybdenum (Dissolved)	EWM01	0.0001	mg/L	0.00043
Nickel (Total)	EWM02	0.0001	mg/L	<0.0001
Nickel (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Selenium (Total)	EWM02	0.0005	mg/L	<0.0005
Selenium (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Silver (Total)	EWM02	0.0001	mg/L	<0.0001
Silver (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Strontium (Total)	EWM02	0.0001	mg/L	1.1
Strontium (Dissolved)	EWM01	0.0001	mg/L	1.1
Tin (Total)	EWM02	0.0005	mg/L	<0.0005
Tin (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Zinc (Total)	EWM02	0.0005	mg/L	0.025
Zinc (Dissolved)	EWM01	0.0005	mg/L	<0.0005



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NATA Corporate Accreditation No.: 2455

HPC Holdings Pty Ltd trading as Symbio Laboratories

ABN 93 621 286 928

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Fax: +61 7 3219 0333

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- Wagga Wagga: Unit 5, 10-12 Koorringal Rd, Wagga Wagga NSW 2650

Test	Method Code	LOR	Unit	427112-3 ORA-PW048 11/02/2016 08:45AM
Mercury (Total)	EWM02	0.0001	mg/L	<0.0001
Mercury (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Aluminium (Total)	EWM02	0.005	mg/L	1.2
Aluminium (Dissolved)	EWM01	0.005	mg/L	0.0091
Silicon (Dissolved)	EWI01	0.1	mg/L	9.0
Silica (from Si) #	EWI01	0.2	mg/L	19.3
Lithium (Dissolved)	EWM01	0.0001	mg/L	0.066
Lithium (Total)	EWM02	0.0001	mg/L	0.12
Uranium (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Uranium (Total)	EWM02	0.0001	mg/L	<0.0001
Vanadium (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Vanadium (Total)	EWM02	0.0001	mg/L	0.0043
Organics				
Benzene	ENV105	1	µg/L	<1
Ethylbenzene	ENV105	1	µg/L	<1
Toluene	ENV105	1	µg/L	<1
ortho-Xylenes	ENV105	1	µg/L	<1
meta- & para-Xylenes	ENV105	2	µg/L	<2.0
Xylenes - Total	ENV105	3	µg/L	<3.0
TPH C6-C9 Fraction	ENV105	10	µg/L	<10
TRPH >C10-C16 Fraction	ENV102	50	µg/L	<50
TRPH >C16-C34 Fraction	ENV102	100	µg/L	<100
TRPH >C34-C40 Fraction	ENV102	100	µg/L	<100
Surrogate o-Terphenyl	ENV102		%	95
ENV103 Phenols Water/Effluent				
2,3,4,6-Tetrachlorophenol	ENV103	10	µg/L	<10
2,4,5-Trichlorophenol	ENV103	10	µg/L	<10
2,4,6-Trichlorophenol	ENV103	10	µg/L	<10
2,4-Dichlorophenol	ENV103	10	µg/L	<10
2,4-Dimethylphenol	ENV103	10	µg/L	<10
2,6-Dichlorophenol	ENV103	10	µg/L	<10
2-Chlorophenol	ENV103	10	µg/L	<10
2-Methylphenol	ENV103	10	µg/L	<10
2-Nitrophenol	ENV103	10	µg/L	<10
3 & 4-Methylphenol	ENV103	20	µg/L	<20
4-chloro-3-methylphenol	ENV103	10	µg/L	<10
Pentachlorophenol	ENV103	10	µg/L	<10
Phenol	ENV103	10	µg/L	<10



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Test	Method Code	LOR	Unit	427112-3 ORA-PW048 11/02/2016 08:45AM
Surrogate 2-chlorophenol-d4	ENV103		%	80
Surrogate 2-fluorophenol	ENV103		%	52
Surrogate 246-Tribromophenol	ENV103		%	83
Organics - PAH				
Naphthalene	ENV103	1	µg/L	<1
Acenaphthylene	ENV103	1	µg/L	<1
Acenaphthene	ENV103	1	µg/L	<1
Fluorene	ENV103	1	µg/L	<1
Phenanthrene	ENV103	1	µg/L	<1
Anthracene	ENV103	1	µg/L	<1
Fluoranthene	ENV103	1	µg/L	<1
Pyrene	ENV103	1	µg/L	<1
Benz(a)anthracene	ENV103	1	µg/L	<1
Chrysene	ENV103	1	µg/L	<1
Benzo(b)fluoranthene	ENV103	1	µg/L	<1
Benzo(k)fluoranthene	ENV103	1	µg/L	<1
Benzo(a)pyrene	ENV103	1	µg/L	<1
Indeno(1,2,3-cd)pyrene	ENV103	1	µg/L	<1
Dibenz(a,h)anthracene	ENV103	1	µg/L	<1
Benzo(g,h,i)perylene	ENV103	1	µg/L	<1
Surrogate Nitrobenzene-d5	ENV103		%	98
Surrogate 2-fluorobiphenyl	ENV103		%	91
Surrogate Phenanthrene-d10	ENV103		%	91
Surrog 4-terphenyl-d14	ENV103		%	101
Total Reportable PAH	ENV103	1	µg/L	<1



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DEFINITIONS: < : Less than, > : Greater than, - : Not Tested, DWB : Dry Weight Basis.

* Test not covered by NATA scope of accreditation.

: The result is derived from a calculation. Only results above the LOR are included in the calculation.

^ Test result has been provided by the client.

Results were reported on an "as received" basis unless otherwise indicated.

Sampling was conducted by the customer and results reported pertain only to the samples submitted.

Responsibility for representative sampling rests with the customer.



Betty Bi, Analyst
(Brisbane)



Jason Roumimper, Chemist
(Brisbane)



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CERTIFICATE NO.: 427112
ISSUE DATE: 25/02/16

Page 1 of 5

REVISION NO: 00
 This certificate supersedes any previous revisions

CLIENT DETAILS: Lexi Bryant
 Bureau Veritas - QLD
 7 Palmer Place
 Murarrie QLD 4172

DATE RECEIVED: 15/02/2016
CLIENT REF. NO: 16PEBR0000776
ORDER NO: 16000078-498

CONDITIONS OF SAMPLE: Receipt Temp °C: 10
 Storage Temp °C: 4
TEST DATE: Sample tested between date received and reported

RESULTS OF ANALYSIS:

Test	Method Code	LOR	Unit	427112-4 ORA-PW053 11/02/2016 11:40AM
Inorganics				
pH	EFF006	0.01	unit	8.42
Electrical Conductivity	EFF007	1	uS/cm	5,500
Dissolved Solids	EFF010	2	mg/L	3,100
Turbidity	EFF061	0.1	NTU	8.1
Fluoride	EFF015	0.05	mg/L	3.6
Chloride	EFF011	2	mg/L	1,100
Calcium (Dissolved)	EWI01	0.1	mg/L	3.3
Magnesium (Dissolved)	EWI01	0.01	mg/L	1.0
Sodium (Dissolved)	EWI01	1	mg/L	1,220
Sodium Absorption Ratio_S	EFF063	0.01		150
Potassium (Dissolved)	EWI01	0.2	mg/L	7.6
Bromide	EWMB	0.005	mg/L	4.06
Alkalinity Bicarb (CaCO3)	EFF031	1	mg/L	1,350
Alkalinity Carbonate (CaCO3)	EFF031	1	mg/L	50
Alkalinity Hydroxide(CaCO3)	EFF031	1	mg/L	<1
Alkalinity Total (CaCO3)	EFF031	1	mg/L	1,400
Alkalinity (Residual) #	EFF031		meq/L	14.41
Ammonia-Nitrogen	EFF044	0.005	mg/L	0.96



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Test	Method Code	LOR	Unit	427112-4 ORA-PW053 11/02/2016 11:40AM
Formaldehyde in Water	ENV137	0.05	mg/L	<0.05
Ammonium	EFF044	0.006	mg/L	1.2
Metals				
Arsenic (Total)	EWM02	0.0005	mg/L	<0.0005
Arsenic (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Barium (Total)	EWM02	0.0001	mg/L	1.1
Barium (Dissolved)	EWM01	0.0001	mg/L	1.1
Beryllium (Total)	EWM02	0.0001	mg/L	<0.0001
Beryllium (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Boron (Total)	EWM02	0.005	mg/L	0.94
Boron (Dissolved)	EWM01	0.005	mg/L	0.67
Cadmium (Total)	EWM02	0.0001	mg/L	<0.0001
Cadmium (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Chromium (Total)	EWM02	0.0005	mg/L	<0.0005
Chromium (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Cobalt (Total)	EWM02	0.0001	mg/L	<0.0001
Cobalt (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Copper (Total)	EWM02	0.0005	mg/L	0.00087
Copper (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Iron (Total)	EWM02	0.005	mg/L	0.42
Iron (Dissolved)	EWM01	0.005	mg/L	0.017
Lead (Total)	EWM02	0.0001	mg/L	0.00028
Lead (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Manganese (Total)	EWM02	0.0005	mg/L	0.0086
Manganese (Dissolved)	EWM01	0.0005	mg/L	0.0038
Molybdenum (Total)	EWM02	0.0001	mg/L	0.00032
Molybdenum (Dissolved)	EWM01	0.0001	mg/L	0.00030
Nickel (Total)	EWM02	0.0001	mg/L	<0.0001
Nickel (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Selenium (Total)	EWM02	0.0005	mg/L	<0.0005
Selenium (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Silver (Total)	EWM02	0.0001	mg/L	<0.0001
Silver (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Strontium (Total)	EWM02	0.0001	mg/L	1.8
Strontium (Dissolved)	EWM01	0.0001	mg/L	1.7
Tin (Total)	EWM02	0.0005	mg/L	<0.0005
Tin (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Zinc (Total)	EWM02	0.0005	mg/L	0.026
Zinc (Dissolved)	EWM01	0.0005	mg/L	<0.0005



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Test	Method Code	LOR	Unit	427112-4 ORA-PW053 11/02/2016 11:40AM
Mercury (Total)	EWM02	0.0001	mg/L	<0.0001
Mercury (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Aluminium (Total)	EWM02	0.005	mg/L	0.14
Aluminium (Dissolved)	EWM01	0.005	mg/L	<0.005
Silicon (Dissolved)	EWI01	0.1	mg/L	9.9
Silica (from Si) #	EWI01	0.2	mg/L	21.2
Lithium (Dissolved)	EWM01	0.0001	mg/L	0.068
Lithium (Total)	EWM02	0.0001	mg/L	0.14
Uranium (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Uranium (Total)	EWM02	0.0001	mg/L	<0.0001
Vanadium (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Vanadium (Total)	EWM02	0.0001	mg/L	0.0023
Organics				
Benzene	ENV105	1	µg/L	<1
Ethylbenzene	ENV105	1	µg/L	<1
Toluene	ENV105	1	µg/L	<1
ortho-Xylenes	ENV105	1	µg/L	<1
meta- & para-Xylenes	ENV105	2	µg/L	<2.0
Xylenes - Total	ENV105	3	µg/L	<3.0
TPH C6-C9 Fraction	ENV105	10	µg/L	<10
TRPH >C10-C16 Fraction	ENV102	50	µg/L	<50
TRPH >C16-C34 Fraction	ENV102	100	µg/L	<100
TRPH >C34-C40 Fraction	ENV102	100	µg/L	<100
Surrogate o-Terphenyl	ENV102		%	92
ENV103 Phenols Water/Effluent				
2,3,4,6-Tetrachlorophenol	ENV103	10	µg/L	<10
2,4,5-Trichlorophenol	ENV103	10	µg/L	<10
2,4,6-Trichlorophenol	ENV103	10	µg/L	<10
2,4-Dichlorophenol	ENV103	10	µg/L	<10
2,4-Dimethylphenol	ENV103	10	µg/L	<10
2,6-Dichlorophenol	ENV103	10	µg/L	<10
2-Chlorophenol	ENV103	10	µg/L	<10
2-Methylphenol	ENV103	10	µg/L	<10
2-Nitrophenol	ENV103	10	µg/L	<10
3 & 4-Methylphenol	ENV103	20	µg/L	<20
4-chloro-3-methylphenol	ENV103	10	µg/L	<10
Pentachlorophenol	ENV103	10	µg/L	<10
Phenol	ENV103	10	µg/L	<10



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Test	Method Code	LOR	Unit	427112-4 ORA-PW053 11/02/2016 11:40AM
Surrogate 2-chlorophenol-d4	ENV103		%	85
Surrogate 2-fluorophenol	ENV103		%	56
Surrogate 246-Tribromophenol	ENV103		%	87
Organics - PAH				
Naphthalene	ENV103	1	µg/L	<1
Acenaphthylene	ENV103	1	µg/L	<1
Acenaphthene	ENV103	1	µg/L	<1
Fluorene	ENV103	1	µg/L	<1
Phenanthrene	ENV103	1	µg/L	<1
Anthracene	ENV103	1	µg/L	<1
Fluoranthene	ENV103	1	µg/L	<1
Pyrene	ENV103	1	µg/L	<1
Benz(a)anthracene	ENV103	1	µg/L	<1
Chrysene	ENV103	1	µg/L	<1
Benzo(b)fluoranthene	ENV103	1	µg/L	<1
Benzo(k)fluoranthene	ENV103	1	µg/L	<1
Benzo(a)pyrene	ENV103	1	µg/L	<1
Indeno(1,2,3-cd)pyrene	ENV103	1	µg/L	<1
Dibenz(a,h)anthracene	ENV103	1	µg/L	<1
Benzo(g,h,i)perylene	ENV103	1	µg/L	<1
Surrogate Nitrobenzene-d5	ENV103		%	93
Surrogate 2-fluorobiphenyl	ENV103		%	85
Surrogate Phenanthrene-d10	ENV103		%	83
Surrog 4-terphenyl-d14	ENV103		%	91
Total Reportable PAH	ENV103	1	µg/L	<1



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DEFINITIONS: < : Less than, > : Greater than, - : Not Tested, DWB : Dry Weight Basis.

* Test not covered by NATA scope of accreditation.

: The result is derived from a calculation. Only results above the LOR are included in the calculation.

^ Test result has been provided by the client.

Results were reported on an "as received" basis unless otherwise indicated.

Sampling was conducted by the customer and results reported pertain only to the samples submitted.

Responsibility for representative sampling rests with the customer.



Betty Bi, Analyst
(Brisbane)



Jason Roumimper, Chemist
(Brisbane)



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CERTIFICATE NO.: 427112
ISSUE DATE: 25/02/16

Page 1 of 5

REVISION NO: 00
 This certificate supersedes any previous revisions

CLIENT DETAILS: Lexi Bryant
 Bureau Veritas - QLD
 7 Palmer Place
 Murarrie QLD 4172

DATE RECEIVED: 15/02/2016
CLIENT REF. NO: 16PEBR0000776
ORDER NO: 16000078-498

CONDITIONS OF SAMPLE: Receipt Temp °C: 10
 Storage Temp °C: 4
TEST DATE: Sample tested between date received and reported

RESULTS OF ANALYSIS:

Test	Method Code	LOR	Unit	427112-5 ORA-PW087 12/02/2016 11:50AM
Inorganics				
pH	EFF006	0.01	unit	8.27
Electrical Conductivity	EFF007	1	uS/cm	6,200
Dissolved Solids	EFF010	2	mg/L	3,600
Turbidity	EFF061	0.1	NTU	5.8
Fluoride	EFF015	0.05	mg/L	3.1
Chloride	EFF011	2	mg/L	1,200
Calcium (Dissolved)	EWI01	0.1	mg/L	4.0
Magnesium (Dissolved)	EWI01	0.01	mg/L	1.1
Sodium (Dissolved)	EWI01	1	mg/L	1,390
Sodium Absorption Ratio_S	EFF063	0.01		160
Potassium (Dissolved)	EWI01	0.2	mg/L	9.0
Bromide	EWMB	0.005	mg/L	4.68
Alkalinity Bicarb (CaCO ₃)	EFF031	1	mg/L	1,540
Alkalinity Carbonate (CaCO ₃)	EFF031	1	mg/L	36
Alkalinity Hydroxide (CaCO ₃)	EFF031	1	mg/L	<1
Alkalinity Total (CaCO ₃)	EFF031	1	mg/L	1,580
Alkalinity (Residual) #	EFF031		meq/L	16.02
Ammonia-Nitrogen	EFF044	0.005	mg/L	1.1



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Test	Method Code	LOR	Unit	427112-5 ORA-PW087 12/02/2016 11:50AM
Formaldehyde in Water	ENV137	0.05	mg/L	<0.05
Ammonium	EFF044	0.006	mg/L	1.4
Metals				
Arsenic (Total)	EWM02	0.0005	mg/L	<0.0005
Arsenic (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Barium (Total)	EWM02	0.0001	mg/L	1.6
Barium (Dissolved)	EWM01	0.0001	mg/L	1.5
Beryllium (Total)	EWM02	0.0001	mg/L	<0.0001
Beryllium (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Boron (Total)	EWM02	0.005	mg/L	1.1
Boron (Dissolved)	EWM01	0.005	mg/L	0.73
Cadmium (Total)	EWM02	0.0001	mg/L	<0.0001
Cadmium (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Chromium (Total)	EWM02	0.0005	mg/L	<0.0005
Chromium (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Cobalt (Total)	EWM02	0.0001	mg/L	0.00030
Cobalt (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Copper (Total)	EWM02	0.0005	mg/L	0.031
Copper (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Iron (Total)	EWM02	0.005	mg/L	1.0
Iron (Dissolved)	EWM01	0.005	mg/L	0.015
Lead (Total)	EWM02	0.0001	mg/L	0.0011
Lead (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Manganese (Total)	EWM02	0.0005	mg/L	0.016
Manganese (Dissolved)	EWM01	0.0005	mg/L	0.0040
Molybdenum (Total)	EWM02	0.0001	mg/L	0.00039
Molybdenum (Dissolved)	EWM01	0.0001	mg/L	0.00030
Nickel (Total)	EWM02	0.0001	mg/L	<0.0001
Nickel (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Selenium (Total)	EWM02	0.0005	mg/L	<0.0005
Selenium (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Silver (Total)	EWM02	0.0001	mg/L	<0.0001
Silver (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Strontium (Total)	EWM02	0.0001	mg/L	2.2
Strontium (Dissolved)	EWM01	0.0001	mg/L	2.0
Tin (Total)	EWM02	0.0005	mg/L	<0.0005
Tin (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Zinc (Total)	EWM02	0.0005	mg/L	0.024
Zinc (Dissolved)	EWM01	0.0005	mg/L	0.00065



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NATA Corporate Accreditation No.: 2455

HPC Holdings Pty Ltd trading as Symbio Laboratories

ABN 93 621 286 928

Tel: 1300 703 166

Fax: +61 7 3219 0333

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- Wagga Wagga: Unit 5, 10-12 Koorringal Rd, Wagga Wagga NSW 2650

Test	Method Code	LOR	Unit	427112-5 ORA-PW087 12/02/2016 11:50AM
Mercury (Total)	EWM02	0.0001	mg/L	<0.0001
Mercury (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Aluminium (Total)	EWM02	0.005	mg/L	0.24
Aluminium (Dissolved)	EWM01	0.005	mg/L	<0.005
Silicon (Dissolved)	EWI01	0.1	mg/L	12
Silica (from Si) #	EWI01	0.2	mg/L	25.7
Lithium (Dissolved)	EWM01	0.0001	mg/L	0.057
Lithium (Total)	EWM02	0.0001	mg/L	0.14
Uranium (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Uranium (Total)	EWM02	0.0001	mg/L	<0.0001
Vanadium (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Vanadium (Total)	EWM02	0.0001	mg/L	0.0023
Organics				
Benzene	ENV105	1	µg/L	<1
Ethylbenzene	ENV105	1	µg/L	<1
Toluene	ENV105	1	µg/L	<1
ortho-Xylenes	ENV105	1	µg/L	<1
meta- & para-Xylenes	ENV105	2	µg/L	<2.0
Xylenes - Total	ENV105	3	µg/L	<3.0
TPH C6-C9 Fraction	ENV105	10	µg/L	<10
TRPH >C10-C16 Fraction	ENV102	50	µg/L	<50
TRPH >C16-C34 Fraction	ENV102	100	µg/L	<100
TRPH >C34-C40 Fraction	ENV102	100	µg/L	<100
Surrogate o-Terphenyl	ENV102		%	100
ENV103 Phenols Water/Effluent				
2,3,4,6-Tetrachlorophenol	ENV103	10	µg/L	<10
2,4,5-Trichlorophenol	ENV103	10	µg/L	<10
2,4,6-Trichlorophenol	ENV103	10	µg/L	<10
2,4-Dichlorophenol	ENV103	10	µg/L	<10
2,4-Dimethylphenol	ENV103	10	µg/L	<10
2,6-Dichlorophenol	ENV103	10	µg/L	<10
2-Chlorophenol	ENV103	10	µg/L	<10
2-Methylphenol	ENV103	10	µg/L	<10
2-Nitrophenol	ENV103	10	µg/L	<10
3 & 4-Methylphenol	ENV103	20	µg/L	<20
4-chloro-3-methylphenol	ENV103	10	µg/L	<10
Pentachlorophenol	ENV103	10	µg/L	<10
Phenol	ENV103	10	µg/L	<10



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Test	Method Code	LOR	Unit	427112-5 ORA-PW087 12/02/2016 11:50AM
Surrogate 2-chlorophenol-d4	ENV103		%	91
Surrogate 2-fluorophenol	ENV103		%	52
Surrogate 246-Tribromophenol	ENV103		%	90
Organics - PAH				
Naphthalene	ENV103	1	µg/L	<1
Acenaphthylene	ENV103	1	µg/L	<1
Acenaphthene	ENV103	1	µg/L	<1
Fluorene	ENV103	1	µg/L	<1
Phenanthrene	ENV103	1	µg/L	<1
Anthracene	ENV103	1	µg/L	<1
Fluoranthene	ENV103	1	µg/L	<1
Pyrene	ENV103	1	µg/L	<1
Benz(a)anthracene	ENV103	1	µg/L	<1
Chrysene	ENV103	1	µg/L	<1
Benzo(b)fluoranthene	ENV103	1	µg/L	<1
Benzo(k)fluoranthene	ENV103	1	µg/L	<1
Benzo(a)pyrene	ENV103	1	µg/L	<1
Indeno(1,2,3-cd)pyrene	ENV103	1	µg/L	<1
Dibenz(a,h)anthracene	ENV103	1	µg/L	<1
Benzo(g,h,i)perylene	ENV103	1	µg/L	<1
Surrogate Nitrobenzene-d5	ENV103		%	96
Surrogate 2-fluorobiphenyl	ENV103		%	85
Surrogate Phenanthrene-d10	ENV103		%	84
Surrog 4-terphenyl-d14	ENV103		%	98
Total Reportable PAH	ENV103	1	µg/L	<1



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DEFINITIONS: < : Less than, > : Greater than, - : Not Tested, DWB : Dry Weight Basis.

* Test not covered by NATA scope of accreditation.

: The result is derived from a calculation. Only results above the LOR are included in the calculation.

^ Test result has been provided by the client.

Results were reported on an "as received" basis unless otherwise indicated.

Sampling was conducted by the customer and results reported pertain only to the samples submitted.

Responsibility for representative sampling rests with the customer.



Betty Bi, Analyst
(Brisbane)



Jason Roumimper, Chemist
(Brisbane)



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CERTIFICATE NO.: 427112
ISSUE DATE: 25/02/16

Page 1 of 5

REVISION NO: 00
 This certificate supersedes any previous revisions

CLIENT DETAILS: Lexi Bryant
 Bureau Veritas - QLD
 7 Palmer Place
 Murarrie QLD 4172

DATE RECEIVED: 15/02/2016
CLIENT REF. NO: 16PEBR0000776
ORDER NO: 16000078-498

CONDITIONS OF SAMPLE: Receipt Temp °C: 10
 Storage Temp °C: 4
TEST DATE: Sample tested between date received and reported

RESULTS OF ANALYSIS:

Test	Method Code	LOR	Unit	427112-6 ORA-PW052 12/02/2016 3:00PM
Inorganics				
pH	EFF006	0.01	unit	8.41
Electrical Conductivity	EFF007	1	uS/cm	5,000
Dissolved Solids	EFF010	2	mg/L	2,900
Turbidity	EFF061	0.1	NTU	35.8
Fluoride	EFF015	0.05	mg/L	3.4
Chloride	EFF011	2	mg/L	880
Calcium (Dissolved)	EWI01	0.1	mg/L	3.2
Magnesium (Dissolved)	EWI01	0.01	mg/L	0.98
Sodium (Dissolved)	EWI01	1	mg/L	1,130
Sodium Absorption Ratio_S	EFF063	0.01		140
Potassium (Dissolved)	EWI01	0.2	mg/L	7.3
Bromide	EWMB	0.005	mg/L	3.27
Alkalinity Bicarb (CaCO3)	EFF031	1	mg/L	1,460
Alkalinity Carbonate (CaCO3)	EFF031	1	mg/L	48
Alkalinity Hydroxide(CaCO3)	EFF031	1	mg/L	<1
Alkalinity Total (CaCO3)	EFF031	1	mg/L	1,510
Alkalinity (Residual) #	EFF031		meq/L	15.44
Ammonia-Nitrogen	EFF044	0.005	mg/L	0.98



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Test	Method Code	LOR	Unit	427112-6 ORA-PW052 12/02/2016 3:00PM
Formaldehyde in Water	ENV137	0.05	mg/L	<0.05
Ammonium	EFF044	0.006	mg/L	1.3
Metals				
Arsenic (Total)	EWM02	0.0005	mg/L	<0.0005
Arsenic (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Barium (Total)	EWM02	0.0001	mg/L	1.2
Barium (Dissolved)	EWM01	0.0001	mg/L	1.1
Beryllium (Total)	EWM02	0.0001	mg/L	<0.0001
Beryllium (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Boron (Total)	EWM02	0.005	mg/L	0.99
Boron (Dissolved)	EWM01	0.005	mg/L	0.61
Cadmium (Total)	EWM02	0.0001	mg/L	0.0001
Cadmium (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Chromium (Total)	EWM02	0.0005	mg/L	<0.0005
Chromium (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Cobalt (Total)	EWM02	0.0001	mg/L	0.00011
Cobalt (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Copper (Total)	EWM02	0.0005	mg/L	0.011
Copper (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Iron (Total)	EWM02	0.005	mg/L	1.8
Iron (Dissolved)	EWM01	0.005	mg/L	0.015
Lead (Total)	EWM02	0.0001	mg/L	0.00068
Lead (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Manganese (Total)	EWM02	0.0005	mg/L	0.016
Manganese (Dissolved)	EWM01	0.0005	mg/L	0.0032
Molybdenum (Total)	EWM02	0.0001	mg/L	0.00041
Molybdenum (Dissolved)	EWM01	0.0001	mg/L	0.00037
Nickel (Total)	EWM02	0.0001	mg/L	<0.0001
Nickel (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Selenium (Total)	EWM02	0.0005	mg/L	<0.0005
Selenium (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Silver (Total)	EWM02	0.0001	mg/L	<0.0001
Silver (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Strontium (Total)	EWM02	0.0001	mg/L	1.8
Strontium (Dissolved)	EWM01	0.0001	mg/L	1.4
Tin (Total)	EWM02	0.0005	mg/L	<0.0005
Tin (Dissolved)	EWM01	0.0005	mg/L	<0.0005
Zinc (Total)	EWM02	0.0005	mg/L	0.030
Zinc (Dissolved)	EWM01	0.0005	mg/L	<0.0005



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Test	Method Code	LOR	Unit	427112-6 ORA-PW052 12/02/2016 3:00PM
Mercury (Total)	EWM02	0.0001	mg/L	<0.0001
Mercury (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Aluminium (Total)	EWM02	0.005	mg/L	0.23
Aluminium (Dissolved)	EWM01	0.005	mg/L	0.0073
Silicon (Dissolved)	EWI01	0.1	mg/L	9.7
Silica (from Si) #	EWI01	0.2	mg/L	20.8
Lithium (Dissolved)	EWM01	0.0001	mg/L	0.047
Lithium (Total)	EWM02	0.0001	mg/L	0.047
Uranium (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Uranium (Total)	EWM02	0.0001	mg/L	<0.0001
Vanadium (Dissolved)	EWM01	0.0001	mg/L	<0.0001
Vanadium (Total)	EWM02	0.0001	mg/L	0.0023
Organics				
Benzene	ENV105	1	µg/L	<1
Ethylbenzene	ENV105	1	µg/L	<1
Toluene	ENV105	1	µg/L	<1
ortho-Xylenes	ENV105	1	µg/L	<1
meta- & para-Xylenes	ENV105	2	µg/L	<2.0
Xylenes - Total	ENV105	3	µg/L	<3.0
TPH C6-C9 Fraction	ENV105	10	µg/L	<10
TRPH >C10-C16 Fraction	ENV102	50	µg/L	<50
TRPH >C16-C34 Fraction	ENV102	100	µg/L	<100
TRPH >C34-C40 Fraction	ENV102	100	µg/L	<100
Surrogate o-Terphenyl	ENV102		%	93
ENV103 Phenols Water/Effluent				
2,3,4,6-Tetrachlorophenol	ENV103	10	µg/L	<10
2,4,5-Trichlorophenol	ENV103	10	µg/L	<10
2,4,6-Trichlorophenol	ENV103	10	µg/L	<10
2,4-Dichlorophenol	ENV103	10	µg/L	<10
2,4-Dimethylphenol	ENV103	10	µg/L	<10
2,6-Dichlorophenol	ENV103	10	µg/L	<10
2-Chlorophenol	ENV103	10	µg/L	<10
2-Methylphenol	ENV103	10	µg/L	<10
2-Nitrophenol	ENV103	10	µg/L	<10
3 & 4-Methylphenol	ENV103	20	µg/L	<20
4-chloro-3-methylphenol	ENV103	10	µg/L	<10
Pentachlorophenol	ENV103	10	µg/L	<10
Phenol	ENV103	10	µg/L	<10



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Test	Method Code	LOR	Unit	427112-6 ORA-PW052 12/02/2016 3:00PM
Surrogate 2-chlorophenol-d4	ENV103		%	78
Surrogate 2-fluorophenol	ENV103		%	52
Surrogate 246-Tribromophenol	ENV103		%	84
Organics - PAH				
Naphthalene	ENV103	1	µg/L	<1
Acenaphthylene	ENV103	1	µg/L	<1
Acenaphthene	ENV103	1	µg/L	<1
Fluorene	ENV103	1	µg/L	<1
Phenanthrene	ENV103	1	µg/L	<1
Anthracene	ENV103	1	µg/L	<1
Fluoranthene	ENV103	1	µg/L	<1
Pyrene	ENV103	1	µg/L	<1
Benz(a)anthracene	ENV103	1	µg/L	<1
Chrysene	ENV103	1	µg/L	<1
Benzo(b)fluoranthene	ENV103	1	µg/L	<1
Benzo(k)fluoranthene	ENV103	1	µg/L	<1
Benzo(a)pyrene	ENV103	1	µg/L	<1
Indeno(1,2,3-cd)pyrene	ENV103	1	µg/L	<1
Dibenz(a,h)anthracene	ENV103	1	µg/L	<1
Benzo(g,h,i)perylene	ENV103	1	µg/L	<1
Surrogate Nitrobenzene-d5	ENV103		%	96
Surrogate 2-fluorobiphenyl	ENV103		%	81
Surrogate Phenanthrene-d10	ENV103		%	89
Surrog 4-terphenyl-d14	ENV103		%	100
Total Reportable PAH	ENV103	1	µg/L	<1



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* Test not covered by NATA scope of accreditation.

: The result is derived from a calculation. Only results above the LOR are included in the calculation.

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Sampling was conducted by the customer and results reported pertain only to the samples submitted.

Responsibility for representative sampling rests with the customer.



Betty Bi, Analyst
(Brisbane)



Jason Roumimper, Chemist
(Brisbane)



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Data Quality Report

Date 24/02/2016

Page 1 of 22



CERTIFICATE No: 427112
ISSUE DATE: 24/02/2016

Page 1 of 22

REVISION NO: 00
This Certificate supersedes any previous revisions

CLIENT DETAILS: Lexi Bryant
Bureau Veritas Minerals Pty Ltd
7 Palmer Place
Murarrie QLD 4172
DATE RECEIVED: 15/02/2016
CLIENT REF NO:
ORDER NO: 16000078-498

CONDITIONS OF SAMPLE: Receipt Temperature: 10°C
Storage Temperature: 4°C
TEST DATE: Sample tested between date received and reported

This Data Quality Report contains information relating to:

Method Blank

Refers to the analytical signal derived from chemical reagents and equipment in the absence of a sample matrix. Method blanks provide an indication of potential method bias for the relevant analytes.

Method Blank analyses are conducted at the minimum rate of one per batch or 5% whichever the greater.

Laboratory Control Sample

The Laboratory Control Sample (LCS) comprises of a certified reference material or control matrix spiked with all analytes representative of the analyte class. The LCS recovery data is used to evaluate method performance.

LCS analyses are conducted at the minimum rate of one per batch or 5% whichever the greater.

Laboratory Duplicate

Involves the analyses of a duplicate sample from within the same analytical batch. The variation between duplicate analyses provides an estimation of method precision and sample heterogeneity.

Duplicate analyses are conducted at the minimum rate of one per batch or 5% whichever the greater

Samples selected for duplicate analysis may not be sourced from this registration.

Methods & Procedures

Analytical methodologies and quality control procedures used for environmental analyses are derived from a variety of reference standards and guidelines including but not limited to APHA, USEPA, AS and NEPM. These methods and procedures are designed to comply with NATA requirements for compliance to ISO/IEC 17025.

Data Quality Report

Date 24/02/2016

Page 2 of 22



CERTIFICATE No: 427112

QC BATCH NO:

Method Blank and Laboratory Control Sample Report

Analyte	Units	LOR	Blank Result	LCS Result	LCS Expected Level	Recovery (%)	Acceptable Recovery (%)	
							Low	High
Method Code ENV102								
TRPH >C10-C16 Fraction	µg/ L	50	<50	260	250	104	40	110
TRPH >C16-C34 Fraction	µg/ L	100	<100	1250	1050	119	60	130
TRPH >C34-C40 Fraction	µg/ L	100	<100	800	770	104	60	130
Method Code ENV105								
Benzene	µg/ L	1	<1	9.9	10.0	99	70	130
Ethylbenzene	µg/ L	1	<1	10.8	10.0	108	70	130
Toluene	µg/ L	1	<1	10.4	10.0	104	70	130
ortho-Xylenes	µg/ L	1	<1	10.9	10.0	109	70	130
meta- & para-Xylenes	µg/ L	2	<2	22.5	20.0	113	70	130
Xylenes - Total	µg/ L	3	N/A	N/A	N/A	N/A	N/A	N/A
TPH C6-C9 Fraction	µg/ L	10	<10	122	100	122	70	150
Method Code EFF006								

Data Quality Report

Date 24/02/2016

Page 3 of 22



CERTIFICATE No: 427112

QC BATCH NO:

Method Blank and Laboratory Control Sample Report

Analyte	Units	LOR	Blank Result	LCS Result	LCS Expected Level	Recovery (%)	Acceptable Recovery (%)	
							Low	High
pH	unit	1		8.82	9.00	98	95	105
Method Code EFF007								
Electrical Conductivity	µS/ cm	1	<1	11660	12880	91	80	120
Method Code EFF015								
Fluoride	mg/ L	0.05	<0.05	0.50	0.50	100	80	120
Method Code EFF031								
Alkalinity Total (CaCO ₃)	mg/ L	1	<1	234	250	94	71	129
Alkalinity Bicarb (CaCO ₃)	mg/ L	1	N/ A	N/ A	N/ A	N/ A	N/ A	N/ A
Alkalinity Carbonate (CaCO ₃)	mg/ L	1	N/ A	N/ A	N/ A	N/ A	N/ A	N/ A
Alkalinity Hydroxide (CaCO ₃)	mg/ L	1	N/ A	N/ A	N/ A	N/ A	N/ A	N/ A
Method Code EFF010								
Solids (Dissolved)	mg/ L	2	N/ A	N/ A	N/ A	N/ A	N/ A	N/ A
Method Code EFF061								

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Analyte	Units	LOR	Blank Result	LCS Result	LCS Expected Level	Recovery (%)	Acceptable Recovery (%)	
							Low	High
Turbidity	NTU	0.1	N/A	N/A	N/A	N/A	N/A	N/A
Method Code EWMB								
Bromide	mg/L	0.005	<0.005	0.0091	0.0100	91	80	120
Method Code EFF137								
Formaldehyde	mg/L	0.05	N/A	N/A	N/A	N/A	N/A	N/A
Method Code EW101								
Calcium (Dissolved)	mg/L	0.1	<0.1	10.0	10.0	100	80	120
Magnesium (Dissolved)	mg/L	0.01	<0.01	9.1	10.0	91	80	120
Sodium (Dissolved)	mg/L	1	<1	15.8	15.0	105	80	120
Potassium (Dissolved)	mg/L	0.2	<0.2	20.0	20.0	100	80	120
Silicon (Dissolved)	mg/L	0.1	<0.1	10.1	10.0	101	80	120
Silica (from Si) #	mg/L	0.2	N/A	N/A	N/A	N/A	N/A	N/A
Method Code EFF063								

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Analyte	Units	LOR	Blank Result	LCS Result	LCS Expected Level	Recovery (%)	Acceptable Recovery (%)	
							Low	High
SAR (Sodium Adsorption Ratio)#	unit	0.8	N/A	N/A	N/A	N/A	N/A	N/A
Method Code EFF044								
Ammonia-Nitrogen	mg/L	0.005	<0.005	0.500	0.500	100	80	110
Ammonium	mg/L	0.006	N/A	N/A	N/A	N/A	N/A	N/A
Method Code EFF011								
Chloride	mg/L	2	N/A	N/A	N/A	N/A	N/A	N/A
Method Code EWM01								
Aluminium (Dissolved)	mg/L	0.005	<0.005	0.0050	0.0050	100	80	120
Arsenic (Dissolved)	mg/L	0.0005	<0.0005	0.0045	0.0050	90	80	120
Barium (Dissolved)	mg/L	0.0001	<0.0001	0.0047	0.0050	94	80	120
Beryllium (Dissolved)	mg/L	0.0001	<0.0001	0.0054	0.0050	108	80	120
Boron (Dissolved)	mg/L	0.005	<0.005	0.0042	0.0050	84	80	120
Cobalt (Dissolved)	mg/L	0.0001	<0.0001	0.0055	0.0050	110	80	120

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Analyte	Units	LOR	Blank Result	LCS Result	LCS Expected Level	Recovery (%)	Acceptable Recovery (%)	
							Low	High
Cadmium (Dissolved)	mg/ L	0.0001	<0.0001	0.0057	0.0050	114	80	120
Chromium (Dissolved)	mg/ L	0.0005	<0.0005	0.0052	0.0050	104	80	120
Copper (Dissolved)	mg/ L	0.0005	<0.0005	0.0055	0.0050	110	80	120
Lead (Dissolved)	mg/ L	0.0001	<0.0001	0.0049	0.0050	98	80	120
Lithium (Dissolved)	mg/ L	0.0001	<0.0001	0.0056	0.0050	112	80	120
Manganese (Dissolved)	mg/ L	0.0005	<0.0005	0.0052	0.0050	104	80	120
Molybdenum (Dissolved)	mg/ L	0.0001	<0.0001	0.0050	0.0050	100	80	120
Mercury (Dissolved)	mg/ L	0.0001	<0.0001	0.0053	0.0050	106	80	120
Nickel (Dissolved)	mg/ L	0.0001	<0.0001	0.0041	0.0050	82	80	120
Selenium (Dissolved)	mg/ L	0.0005	<0.0005	0.0059	0.0050	118	80	120
Silver (Dissolved)	mg/ L	0.0001	<0.0001	0.0051	0.0050	102	80	120
Strontium (Dissolved)	mg/ L	0.0001	<0.0001	0.0053	0.0050	106	80	120
Tin (Dissolved)	mg/ L	0.0005	<0.0005	0.0051	0.0050	102	80	120

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Analyte	Units	LOR	Blank Result	LCS Result	LCS Expected Level	Recovery (%)	Acceptable Recovery (%)	
							Low	High
Uranium (Dissolved)	mg/ L	0.0001	<0.0001	0.0053	0.0050	106	80	120
Vanadium (Dissolved)	mg/ L	0.0001	<0.0001	0.0047	0.0050	94	80	120
Zinc (Dissolved)	mg/ L	0.0005	<0.0005	0.0052	0.0050	104	80	120
Method Code EWM02								
Aluminium (Total)	mg/ L	0.005	<0.005	0.0058	0.0050	116	80	120
Arsenic (Total)	mg/ L	0.0005	<0.0005	0.0054	0.0050	108	80	120
Barium (Total)	mg/ L	0.0001	<0.0001	0.0055	0.0050	110	80	120
Beryllium (Total)	mg/ L	0.0001	<0.0001	0.0042	0.0050	84	80	120
Boron (Total)	mg/ L	0.005	<0.005	0.0054	0.0050	108	80	120
Cobalt (Total)	mg/ L	0.0001	<0.0001	0.0053	0.0050	106	80	120
Cadmium (Total)	mg/ L	0.0001	<0.0001	0.0056	0.0050	112	80	120
Chromium (Total)	mg/ L	0.0005	<0.0005	0.0052	0.0050	104	80	120
Copper (Total)	mg/ L	0.0005	<0.0005	0.0052	0.0050	104	80	120

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Analyte	Units	LOR	Blank Result	LCS Result	LCS Expected Level	Recovery (%)	Acceptable Recovery (%)	
							Low	High
Lead (Total)	mg/ L	0.0001	<0.0001	0.0053	0.0050	106	80	120
Lithium (Total)	mg/ L	0.0001	<0.0001	0.0041	0.0050	82	80	120
Manganese (Total)	mg/ L	0.0005	<0.0005	0.0048	0.0050	96	80	120
Molybdenum (Total)	mg/ L	0.0001	<0.0001	0.0054	0.0050	108	80	120
Mercury (Total)	mg/ L	0.0001	<0.0001	0.0056	0.0050	112	80	120
Nickel (Total)	mg/ L	0.0001	<0.0001	0.0040	0.0050	80	80	120
Selenium (Total)	mg/ L	0.0005	<0.0005	0.0049	0.0050	98	80	120
Silver (Total)	mg/ L	0.0001	<0.0001	0.0054	0.0050	108	80	120
Strontium (Total)	mg/ L	0.0001	<0.0001	0.0052	0.0050	104	80	120
Tin (Total)	mg/ L	0.0005	<0.0005	0.0057	0.0050	114	80	120
Uranium (Total)	mg/ L	0.0001	<0.0001	0.0048	0.0050	96	80	120
Vanadium (Total)	mg/ L	0.0001	<0.0001	0.0058	0.0050	116	80	120
Zinc (Total)	mg/ L	0.0005	<0.0005	0.0045	0.0050	90	80	120

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Analyte	Units	LOR	Blank Result	LCS Result	LCS Expected Level	Recovery (%)	Acceptable Recovery (%)	
							Low	High
Method Code ENV103								
Naphthalene	µg/ L	1	<1	0.86*	1	86	65	125
Acenaphthylene	µg/ L	1	<1	0.83*	1	83	65	125
Acenaphthene	µg/ L	1	<1	0.86*	1	86	65	125
Fluorene	µg/ L	1	<1	0.76*	1	76	65	125
Phenanthrene	µg/ L	1	<1	0.78*	1	78	65	125
Anthracene	µg/ L	1	<1	0.82*	1	82	65	125
Fluoranthene	µg/ L	1	<1	0.73*	1	73	65	125
Pyrene	µg/ L	1	<1	0.73*	1	73	65	125
Benz(a)anthracene	µg/ L	1	<1	0.85*	1	85	65	125
Chrysene	µg/ L	1	<1	0.74*	1	74	65	125
Benzo(b)fluoranthene	µg/ L	1	<1	1.02	1	102	65	125
Benzo(k)fluoranthene	µg/ L	1	<1	0.81*	1	81	65	125

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Analyte	Units	LOR	Blank Result	LCS Result	LCS Expected Level	Recovery (%)	Acceptable Recovery (%)	
							Low	High
Benzo(a)pyrene	µg/ L	1	<1	0.83*	1	83	65	125
Indeno(1,2,3-cd)pyrene	µg/ L	1	<1	0.83*	1	83	65	125
Dibenz(a,h)anthracene	µg/ L	1	<1	0.75*	1	75	65	125
Benzo(g,h,i)perylene	µg/ L	1	<1	0.73*	1	73	65	125
PAH Total	µg/ L	1	N/ A	N/ A	N/ A	N/ A	N/ A	N/ A
2,3,4,6-Tetrachlorophenol	µg/ L	10	<10	70	100	70	60	130
2,4,5-Trichlorophenol	µg/ L	10	<10	75	100	75	60	130
2,4,6-Trichlorophenol	µg/ L	10	<10	72	100	72	60	130
2,4-Dichlorophenol	µg/ L	10	<10	73	100	73	60	130
2,4-Dimethylphenol	µg/ L	10	<10	67	100	67	60	130
2,6-Dichlorophenol	µg/ L	10	<10	70	100	70	60	130
2-Chlorophenol	µg/ L	10	<10	70	100	70	60	130
2-Methylphenol	µg/ L	10	<10	80	100	80	60	130

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Analyte	Units	LOR	Blank Result	LCS Result	LCS Expected Level	Recovery (%)	Acceptable Recovery (%)	
							Low	High
2-Nitrophenol	µg/ L	10	<10	81	100	81	60	130
3 & 4-Methylphenol	µg/ L	20	N/ A	110	100	110	60	130
4-chloro-3-methylphenol	µg/ L	10	<10	76	100	76	60	130
Pentachlorophenol	µg/ L	10	N/ A	N/ A	N/ A	N/ A	N/ A	N/ A
Phenol	µg/ L	10	<10	82	100	82	60	130

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Sample ID	Analyte	Units	LOR	Original Result	Duplicate Result	% RPD	Acceptance Criteria (%)
	Method Code ENV102						
427112-6	TRPH >C10-C16 Fraction	µg/ L	50	<50	<50	0	30
427112-6	TRPH >C16-C34 Fraction	µg/ L	100	<100	<100	0	25
427112-6	TRPH >C34-C40 Fraction	µg/ L	100	<100	<100	0	25
	Method Code ENV105						
427112-1	Benzene	µg/ L	1	<1	<1	0	50
427112-1	Ethylbenzene	µg/ L	1	<1	<1	0	50
427112-1	Toluene	µg/ L	1	<1	<1	0	50
427112-1	Ortho-Xylenes	µg/ L	1	<1	<1	0	50
427112-1	meta- & para-Xylenes	µg/ L	2	<2	<2	0	50
	Xylenes - Total	µg/ L	3	N/ A	N/ A	N/ A	N/ A
427112-1	TPH C6-C9 Fraction	µg/ L	10	30	25	18.2	30

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	Method Code EFF006						
427112-2	pH	unit	0.01	8.59	8.58	0.1	2
	Method Code EFF007						
427112-2	Electrical Conductivity	µS/cm	1	4883	4883	0	10
	Method Code EFF015						
426708-1	Fluoride	mg/L	0.05	0.48	0.44	8.7	20
	Method Code EFF031						
426845-1	Alkalinity Total (CaCO ₃)	mg/L	1	178	174	2.3	20
	Alkalinity Bicarb (CaCO ₃)	mg/L	1	N/A	N/A	N/A	N/A
	Alkalinity Carbonate (CaCO ₃)	mg/L	1	N/A	N/A	N/A	N/A
	Alkalinity Hydroxide (CaCO ₃)	mg/L	1	N/A	N/A	N/A	N/A
	Method Code EFF063						

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Sample ID	Analyte	Units	LOR	Original Result	Duplicate Result	% RPD	Acceptance Criteria (%)
	SAR (Sodium Adsorption Ratio)#	unit	0.8	N/A	N/A	N/A	N/A
	Method Code EWMB						
426426-1	Bromide	mg/L	0.005	0.048	0.048	0	25
	Method Code EFF137						
	Formaldehyde	mg/L	0.05	N/A	N/A	N/A	N/A
	Method Code EFF011						
427094-1	Chloride	mg/L	2	3254	3266	0.3	20
	Method Code EWI01						
427112-1	Calcium (Dissolved)	mg/L	0.1	3.2	3.2	0	15
427112-1	Magnesium (Dissolved)	mg/L	0.05	0.90	0.90	0	15
427112-1	Sodium (Dissolved)	mg/L	1	1047	1050	0.3	15
427112-1	Potassium (Dissolved)	mg/L	0.2	7.5	7.5	0	15

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Sample ID	Analyte	Units	LOR	Original Result	Duplicate Result	% RPD	Acceptance Criteria (%)
427112-1	Silicon (Dissolved)	mg/ L	0.1	9.5	9.6	1.0	15
	Silica (from Si) #	mg/ L	0.2	N/ A	N/ A	N/ A	N/ A
	Method Code EFF010						
	Solids (Dissolved)	mg/ L	2	N/ A	N/ A	N/ A	N/ A
	Method Code EFF044						
425815-1	Ammonia-Nitrogen	mg/ L	0.005	25.58	25.50	0.3	20
	Ammonium	mg/ L	0.006	N/ A	N/ A	N/ A	N/ A
	Method Code EWM01						
427112-5	Aluminium (Dissolved)	mg/ L	0.005	<0.005	<0.005	0	30
427112-5	Arsenic (Dissolved)	mg/ L	0.0005	<0.0005	<0.0005	0	50
427112-5	Barium (Dissolved)	mg/ L	0.0001	1.553	1.537	1.0	25
427112-5	Beryllium (Dissolved)	mg/ L	0.0001	<0.0001	<0.0001	0	50

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Sample ID	Analyte	Units	LOR	Original Result	Duplicate Result	% RPD	Acceptance Criteria (%)
427112-5	Boron (Dissolved)	mg/ L	0.005	0.753	0.715	5.3	25
427112-5	Cobalt (Dissolved)	mg/ L	0.0001	<0.0001	<0.0001	0	50
427112-5	Cadmium (Dissolved)	mg/ L	0.0001	<0.0001	<0.0001	0	50
427112-5	Chromium (Dissolved)	mg/ L	0.0005	<0.0005	<0.0005	0	50
427112-5	Copper (Dissolved)	mg/ L	0.0005	<0.0005	<0.0005	0	50
427112-5	Lead (Dissolved)	mg/ L	0.0001	<0.0001	<0.0001	0	50
427112-5	Lithium (Dissolved)	mg/ L	0.0001	0.0608	0.0538	12.2	25
427112-5	Manganese (Dissolved)	mg/ L	0.0005	0.0040	0.0040	0	30
427112-5	Molybdenum (Dissolved)	mg/ L	0.0001	0.0003	0.0003	0	50
427112-5	Mercury (Dissolved)	mg/ L	0.0001	<0.0001	<0.0001	0	50
427112-5	Nickel (Dissolved)	mg/ L	0.0001	<0.0001	<0.0001	0	50
427112-5	Selenium (Dissolved)	mg/ L	0.0005	<0.0005	<0.0005	0	50

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Sample ID	Analyte	Units	LOR	Original Result	Duplicate Result	% RPD	Acceptance Criteria (%)
427112-5	Silver (Dissolved)	mg/ L	0.0001	<0.0001	<0.0001	0	50
427112-5	Stontium (Dissolved)	mg/ L	0.0001	2.018	1.977	2.1	25
427112-5	Tin (Dissolved)	mg/ L	0.0005	<0.0005	<0.0005	0	50
427112-5	Uranium (Dissolved)	mg/ L	0.0001	<0.0001	<0.0001	0	50
427112-5	Vanadium (Dissolved)	mg/ L	0.0001	<0.0001	<0.0001	0	50
427112-5	Zinc (Dissolved)	mg/ L	0.0005	0.0006	0.0006	0	30
	Method Code EWM02						
427112-5	Aluminium (Total)	mg/ L	0.005	0.2511	0.2237	11.5	25
427112-5	Arsenic (Total)	mg/ L	0.0005	<0.0005	<0.0005	0	50
427112-5	Barium (Total)	mg/ L	0.0001	1.555	1.545	0.6	25
427112-5	Beryllium (Total)	mg/ L	0.0001	<0.0001	<0.0001	0	50
427112-5	Boron (Total)	mg/ L	0.005	1.067	1.055	1.1	25

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427112-5	Cobalt (Total)	mg/ L	0.0001	0.0003	0.0003	0	50
427112-5	Cadmium (Total)	mg/ L	0.0001	<0.0001	<0.0001	0	50
427112-5	Chromium (Total)	mg/ L	0.0005	<0.0005	<0.0005	0	50
427112-5	Copper (Total)	mg/ L	0.0005	0.0315	0.0315	0	25
427112-5	Lead (Total)	mg/ L	0.0001	0.0009	0.0012	27.8	30
427112-5	Lithium (Total)	mg/ L	0.0001	0.1373	0.1391	1.3	25
427112-5	Manganese (Total)	mg/ L	0.0005	0.0162	0.0156	4.0	25
427112-5	Molybdenum (Total)	mg/ L	0.0001	0.0004	0.0004	0	50
427112-5	Mercury (Total)	mg/ L	0.0001	<0.0001	<0.0001	0	50
427112-5	Nickel (Total)	mg/ L	0.0001	<0.0001	<0.0001	0	50
427112-5	Selenium (Total)	mg/ L	0.0005	<0.0005	<0.0005	0	50
427112-5	Silver (Total)	mg/ L	0.0001	<0.0001	<0.0001	0	50

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427112-5	Strontium (Total)	mg/ L	0.0001	2.161	2.192	1.5	25
427112-5	Tin (Total)	mg/ L	0.0005	<0.0005	<0.0005	0	50
427112-5	Uranium (Total)	mg/ L	0.0001	<0.0001	<0.0001	0	50
427112-5	Vanadium (Total)	mg/ L	0.0001	0.0023	0.0023	0	30
427112-5	Zinc (Total)	mg/ L	0.0005	0.0248	0.0238	4.5	25
	Method Code - ENV103						
427112-6	Naphthalene	µg/ L	1	<1	<1	0	20
427112-6	Acenaphthylene	µg/ L	1	<1	<1	0	20
427112-6	Acenaphthene	µg/ L	1	<1	<1	0	20
427112-6	Fluorene	µg/ L	1	<1	<1	0	20
427112-6	Phenanthrene	µg/ L	1	<1	<1	0	20
427112-6	Anthracene	µg/ L	1	<1	<1	0	20

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427112-6	Fluoranthene	µg/ L	1	<1	<1	0	20
427112-6	Pyrene	µg/ L	1	<1	<1	0	20
427112-6	Benz(a)anthracene	µg/ L	1	<1	<1	0	20
427112-6	Chrysene	µg/ L	1	<1	<1	0	20
427112-6	Benzo(b)fluoranthene	µg/ L	1	<1	<1	0	20
427112-6	Benzo(k)fluoranthene	µg/ L	1	<1	<1	0	20
427112-6	Benzo(a)pyrene	µg/ L	1	<1	<1	0	20
427112-6	Indeno(1,2,3-cd)pyrene	µg/ L	1	<1	<1	0	20
427112-6	Dibenz(a,h)anthracene	µg/ L	1	<1	<1	0	20
427112-6	Benzo(g,h,i)perylene	µg/ L	1	<1	<1	0	20
427112-6	PAH Total	µg/ L	16	N/A	N/A	N/A	N/A
427112-6	2,3,4,6-Tetrachlorophenol	µg/ L	10	<10	<10	0	20

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427112-6	2,4,5-Trichlorophenol	µg/ L	10	<10	<10	0	20
427112-6	2,4,6-Trichlorophenol	µg/ L	10	<10	<10	0	20
427112-6	2,4-Dichlorophenol	µg/ L	10	<10	<10	0	20
427112-6	2,4-Dimethylphenol	µg/ L	10	<10	<10	0	20
427112-6	2,6-Dichlorophenol	µg/ L	10	<10	<10	0	20
427112-6	2-Chlorophenol	µg/ L	10	<10	<10	0	20
427112-6	2-Methylphenol	µg/ L	10	<10	<10	0	20
427112-6	2-Nitrophenol	µg/ L	10	<10	<10	0	20
427112-6	3 & 4-Methylphenol	µg/ L	20	<20	<20	0	20
427112-6	4-chloro-3-methylphenol	µg/ L	10	<10	<10	0	20
	Pentachlorophenol	µg/ L	10	N/ A	N/ A	N/ A	N/ A
427112-6	Phenol	µg/ L	10	<10	<10	0	20

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QC BATCH NO:

Surrogate Control Limit Report

Surrogate	Acceptable Criteria	
	Lower limit	Upper limit
Method Code ENV102		
Surrogate o-Terphenyl	60	130
Method Code ENV105		
Surrogate 1,2-dichlorobenzene-d4	70	130
Surrogate Chlorobenzene-d5	70	130
Surrogate Fluorobenzene	70	130
Method Code ENV103		
Surrogate Nitrobenzene-d5	65	125
Surrogate 2-fluorobiphenyl	65	125
Surrogate Phenanthrene-d10	65	125
Surrogate 4-terphenyl-d14	65	125
Surrogate 2-chlorophenol-d4	60	130
Surrogate 2-fluorophenol	50	100
Surrogate 2,4,6-Tribromophenol	60	130

* - LCS Result obtained is below the LOR owing to low spike concentrations involved.