ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS WATER
ANALYSIS AND TESTING REPORT

REPORT TO: Donelda Campbell

REPORT ON: BMCC
Katoomba WMF
Annual Monitoring Results

REPORT NO: 24006746 (2)

SAMPLED BY: D. Shawcross & T. Godden

REPORTED BY: S. Thompson

Stephanie Thompson
Environmental Sampling Supervisor

NATA
WORLD RECOGNISED ACCREDITATION

Accreditation # 15784
Site # 11436

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ALS WATER
ANALYSIS AND TESTING REPORT

BMCC
KATOOMBA WMF

	Units								
ALS Sydney Report No.									
Date of Sample		20/08/2018	20/08/2018	20/08/2018	20/08/2018	20/08/2018	20/08/2018	20/08/2018	20/08/2018
Site Name		**S1A**	**S3**	**S5**	**S6**	**S7**	**S8**	**S9**	**LEACHATE**
				Also known as E1	**Also known as E2**				
General Comments/ Observations		**Low Flow, Clear**	**Low Flow, Clear**	**Dry**	**No Discharge**	**Dry**	**Low Flow, Cloudy**	**Mod Flow, Clear**	**Mod Level, Cloudy**
Temperature	°C	**5.3**	**6.7**				**4.8**	**4.2**	**7.1**
pH	pH Units	**5.8**	**7.1**				**6.1**	**6.0**	**7.3**
Electrical Conductivity	µS/cm	**121**	**126**				**112**	**113**	**1295**
Total Suspended Solids	mg/L	**<5**	**14**				**158**	**<5**	**20**
Total Dissolved Solids	mg/L								**454**
Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	mg/L								<1
Carbonate Alkalinity as CaCO3	mg/L								<1
Bicarbonate Alkalinity as CaCO3	mg/L								370
Total Alkalinity as CaCO3	mg/L								370
Sulfate (Turbidimetric) as SO4 2									
Sulfate as SO4 - Turbidimetric	mg/L								6
Chloride by Discrete Analyser									
Chloride	mg/L								117
Dissolved Major Cations									
Calcium	mg/L								30
Magnesium	mg/L								8
Sodium	mg/L								78

Potassium	mg/L								58
Total Metals by ICP-MS									
Aluminium	mg/L								<0.01
Arsenic	mg/L								0.001
Barium	mg/L								0.787
Cadmium	mg/L								<0.0001
Chromium	mg/L								0.001
Cobalt	mg/L								0.004
Copper	mg/L								0.002
Lead	mg/L								<0.001
Manganese	mg/L								1.63
Zinc	mg/L								<0.005
Total Recoverable Mercury by FIMS									
Mercury	mg/L								<0.0001

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Site Name		**S1A**	**S3**	**S5**	**S6**	**S7**	**S8**	**S9**	**LEACHATE**
Dissolved Hexavalent Chromium									
Hexavalent Chromium	mg/L			----	----	----			<0.01
EK040P: Fluoride by PC Titrator									
Fluoride	mg/L			----	----	----			<0.1
Ammonia as N by Discrete Analyser									
Ammonia as N	mg/L	0.04	0.21	----	----	----	0.03	0.03	60.3
Nitrite as N by Discrete Analyser									
Nitrite as N	mg/L			----	----	----			<0.01
Nitrate as N by Discrete Analyser									
Nitrate as N	mg/L			----	----	----			0.4
Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	mg/L			----	----	----			0.4
Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	mg/L			----	----	----			0.05
Total Organic Carbon (TOC)									
Total Organic Carbon	mg/L	1	2	----	----	----	4	3	17
Chemical Oxygen Demand (Spectrophotometric)									
Chemical Oxygen Demand	mg/L	<10	<10	----	----	----	94	<10	
Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	mg/L	<2	<2	----	----	----	<2	<2	
Total Phenol by Discrete Analyser									
Phenols (Total)				----	----	----			<0.05

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Site Name		**S1A**	**S3**	**S5**	**S6**	**S7**	**S8**	**S9**	**LEACHATE**
Organochlorine Pesticides (OC)									
alpha-BHC	µg/L			----	----	----			<0.5
Hexachlorobenzene (HCB)	µg/L			----	----	----			<0.5
beta-BHC	µg/L			----	----	----			<0.5
gamma-BHC	µg/L			----	----	----			<0.5
delta-BHC	µg/L			----	----	----			<0.5
Heptachlor	µg/L			----	----	----			<0.5
Aldrin	µg/L			----	----	----			<0.5
Heptachlor epoxide	µg/L			----	----	----			<0.5
trans-Chlordane	µg/L			----	----	----			<0.5
alpha-Endosulfan	µg/L			----	----	----			<0.5
cis-Chlordane	µg/L			----	----	----			<0.5
Dieldrin	µg/L			----	----	----			<0.5
4.4`-DDE	µg/L			----	----	----			<0.5
Endrin	µg/L			----	----	----			<0.5
beta-Endosulfan	µg/L			----	----	----			<0.5
4.4`-DDD	µg/L			----	----	----			<0.5
Endrin aldehyde	µg/L			----	----	----			<0.5
Endosulfan sulfate	µg/L			----	----	----			<0.5
4.4`-DDT	µg/L			----	----	----			<2.0
Endrin ketone	µg/L			----	----	----			<0.5
Methoxychlor	µg/L			----	----	----			<2.0

Total Chlordane (sum)	µg/L			----	----	----			<0.5
Sum of DDD + DDE + DDT	µg/L			----	----	----			<0.5
Sum of Aldrin + Dieldrin	µg/L			----	----	----			<0.5
Organophosphorus Pesticides (OP)									
Dichlorvos	µg/L			----	----	----			<0.5
Demeton-S-methyl	µg/L			----	----	----			<0.5
Monocrotophos	µg/L			----	----	----			<2.0
Dimethoate	µg/L			----	----	----			<0.5
Diazinon	µg/L			----	----	----			<0.5
Chlorpyrifos-methyl	µg/L			----	----	----			<0.5
Parathion-methyl	µg/L			----	----	----			<2.0
Malathion	µg/L			----	----	----			<0.5
Fenthion	µg/L			----	----	----			<0.5
Chlorpyrifos	µg/L			----	----	----			<0.5
Parathion	µg/L			----	----	----			<2.0
Pirimphos-ethyl	µg/L			----	----	----			<0.5
Chlorfenvinphos	µg/L			----	----	----			<0.5
Bromophos-ethyl	µg/L			----	----	----			<0.5
Fenamiphos	µg/L			----	----	----			<0.5
Prothiofos	µg/L			----	----	----			<0.5
Ethion	µg/L			----	----	----			<0.5
Carbophenothion	µg/L			----	----	----			<0.5
Azinphos Methyl	µg/L			----	----	----			<0.5

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Site Name		**S1A**	**S3**	**S5**	**S6**	**S7**	**S8**	**S9**	**LEACHATE**
Organochlorine Pesticide Surrogate									
Dibromo-DDE	%			----	----	----			83.5
Organophosphorus Pesticide Surrogate									
DEF	%			----	----	----			70.3
Polynuclear Aromatic Hydrocarbons									
Naphthalene	µg/L			----	----	----			<1.0
Acenaphthylene	µg/L			----	----	----			<1.0
Acenaphthene	µg/L			----	----	----			<1.0
Fluorene	µg/L			----	----	----			<1.0
Phenanthrene	µg/L			----	----	----			<1.0
Anthracene	µg/L			----	----	----			<1.0
Fluoranthene	µg/L			----	----	----			<1.0
Pyrene	µg/L			----	----	----			<1.0
Benz(a)anthracene	µg/L			----	----	----			<1.0
Chrysene	µg/L			----	----	----			<1.0
Benzo(b+j)fluoranthene	µg/L			----	----	----			<1.0
Benzo(k)fluoranthene	µg/L			----	----	----			<1.0
Benzo(a)pyrene	µg/L			----	----	----			<0.5
Indeno(1.2.3.cd)pyrene	µg/L			----	----	----			<1.0
Dibenz(a.h)anthracene	µg/L			----	----	----			<1.0
Benzo(g.h.i)perylene	µg/L			----	----	----			<1.0
Sum of polycyclic aromatic hydrocarbons	µg/L			----	----	----			<0.5

Benzo(a)pyrene TEQ (zero)	µg/L			----	----	----			<0.5
Phenolic Compound Surrogates									
Phenol-d6	%			----	----	----			17.6
2-Chlorophenol-D4	%			----	----	----			42.9
2.4.6-Tribromophenol	%			----	----	----			70.2
PAH Surrogates									
2-Fluorobiphenyl	%			----	----	----			81.2
Anthracene-d10	%			----	----	----			85.4
4-Terphenyl-d14	%			----	----	----			71.8

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Site Name		**S1A**	**S3**	**S5**	**S6**	**S7**	**S8**	**S9**	**LEACHATE**
Total Petroleum Hydrocarbons									
C6 - C9 Fraction	µg/L			----	----	----			<20
C10 - C14 Fraction	µg/L			----	----	----			<50
C15 - C28 Fraction	µg/L			----	----	----			130
C29 - C36 Fraction	µg/L			----	----	----			<50
C10 - C36 Fraction (sum)	µg/L			----	----	----			130
Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	µg/L			----	----	----			<20
C6 - C10 Fraction minus BTEX (F1)	µg/L			----	----	----			<20
>C10 - C16 Fraction	µg/L			----	----	----			<100
>C16 - C34 Fraction	µg/L			----	----	----			170
>C34 - C40 Fraction	µg/L			----	----	----			<100
>C10 - C40 Fraction (sum)	µg/L			----	----	----			170
>C10 - C16 Fraction minus Naphthalene (F2)	µg/L			----	----	----			<100
BTEXN									
Benzene	µg/L			----	----	----			<1
Toluene	µg/L			----	----	----			<2
Ethylbenzene	µg/L			----	----	----			<2
meta- & para-Xylene	µg/L			----	----	----			<2
ortho-Xylene	µg/L			----	----	----			<2
Total Xylenes	µg/L			----	----	----			<2
Sum of BTEX	µg/L			----	----	----			<1
Naphthalene	µg/L			----	----	----			<5

TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	%			----	----	----			104
Toluene-D8	%			----	----	----			103
4-Bromofluorobenzene	%			----	----	----			98.6

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Date of Sample		10/10/2018	20/08/2018	20/08/2018	20/08/2018	20/08/2018	20/08/2018	20/08/2018	20/08/2018	20/08/2018
Site Name		**LB12/DP1**	**BORE 8**	**BORE10A**	**BORE11B**	**BORE12**	**MP # 1**	**MP # 2**	**MP # 3**	**MP # 4**
General Comments/ Observations		**Cloudy**	**Clear**	**Clear**	**Cloudy**	**Clear**	**Cloudy**	**Dry**	**Dry**	**Cloudy**
Temperature	°C	12.1	10.6	11.5	6.4	10.4	14.5	----	----	10.2
pH	pH Units	6.5	5.7	5	4.9	6.0	6.9	----	----	6.9
Electrical Conductivity	µS/cm	1294	92	492	296	83	4440	----	----	644
Total Suspended Solids	mg/L	3335								
Total Dissolved Solids	mg/L	8	73	278	170	66	1450	----	----	372
Water Height	m	4.69	4.41	7.47	1.34	1.29	5.18	----	----	5.55
Alkalinity by PC Titrator										
Hydroxide Alkalinity as CaCO3	mg/L	<1	<1	<1	<1	<1	<1	----	----	<1
Carbonate Alkalinity as CaCO3	mg/L	<1	<1	<1	<1	<1	<1	----	----	<1
Bicarbonate Alkalinity as CaCO3	mg/L	301	<1	<1	<1	<1	1480	----	----	224
Total Alkalinity as CaCO3	mg/L	301	<1	<1	<1	<1	1480	----	----	224
Sulfate (Turbidimetric) as SO4 2										
Sulfate as SO4 - Turbidimetric	mg/L	47	2	48	40	1	<1	----	----	54
Chloride by Discrete Analyser										
Chloride	mg/L	180	14	65	32	14	119	----	----	14
Dissolved Major Cations										
Calcium	mg/L	24	1	15	<1	2	163	----	----	106
Magnesium	mg/L	8	<1	3	<1	<1	39	----	----	5

Sodium	mg/L	104	6	37	30	6	121	----	----	13
Potassium	mg/L	57	1	16	13	1	157	----	----	8
Total Metals by ICP-MS										
Aluminium	mg/L	38.8	0.25	4.59	3.7	0.57		----	----	
Arsenic	mg/L	0.006	<0.001	0.002	0.008	<0.001		----	----	
Barium	mg/L	0.161	0.023	0.133	0.026	0.04		----	----	
Cadmium	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		----	----	
Chromium	mg/L	0.122	<0.001	0.005	0.022	0.002		----	----	
Cobalt	mg/L	0.012	<0.001	0.008	<0.001	0.004		----	----	
Copper	mg/L	0.055	0.001	0.007	0.022	<0.001		----	----	
Lead	mg/L	0.051	0.003	0.012	0.022	0.002		----	----	
Manganese	mg/L	2.65	0.037	1.46	0.04	0.477		----	----	
Zinc	mg/L	0.198	0.021	0.099	1.04	0.026		----	----	
Total Recoverable Mercury by FIMS										
Mercury	mg/L	0.0001	<0.0001	0.0002	<0.0001	<0.0001		----	----	

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Date of Sample		10/10/2018	20/08/2018	20/08/2018	20/08/2018	20/08/2018	20/08/2018	20/08/2018	20/08/2018	20/08/2018
Site Name		**LB12**	**BORE 8**	**BORE10A**	**BORE11B**	**BORE12**	**MP # 1**	**MP # 2**	**MP # 3**	**MP # 4**
Dissolved Hexavalent Chromium										
Hexavalent Chromium	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01				
Fluoride by PC Titrator										
Fluoride	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1				
Ammonia as N by Discrete Analyser										
Ammonia as N	mg/L	47.7	0.03	4.77	1.91	0.01	230			0.06
Nitrite as N by Discrete Analyser										
Nitrite as N	mg/L	0.02	<0.01	<0.01	<0.01	<0.01				
Nitrate as N by Discrete Analyser										
Nitrate as N	mg/L	0.47	1.62	8	0.79	1.98				
Nitrite plus Nitrate as N (NOx) by Discrete Analyser										
Nitrite + Nitrate as N	mg/L	0.49	1.62	8	0.79	1.98				
Total Phosphorus as P by Discrete Analyser										
Total Phosphorus as P	mg/L	0.56								
Total Organic Carbon (TOC)										
Total Organic Carbon	mg/L	9	1	13	29	2	107			13
Total Phenol by Discrete Analyser										
Phenols (Total)	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05			<0.05

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Site Name		**LB12**	**BORE 8**	**BORE10A**	**BORE11B**	**BORE12**	**MP # 1**	**MP # 2**	**MP # 3**	**MP # 4**
Organochlorine Pesticides (OC)										
alpha-BHC	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Hexachlorobenzene (HCB)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
beta-BHC	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
gamma-BHC	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
delta-BHC	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Heptachlor	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Aldrin	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Heptachlor epoxide	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
trans-Chlordane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
alpha-Endosulfan	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
cis-Chlordane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Dieldrin	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
4.4`-DDE	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Endrin	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
beta-Endosulfan	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
4.4`-DDD	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Endrin aldehyde	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Endosulfan sulfate	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
4.4`-DDT	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0				

Endrin ketone	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Methoxychlor	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0				
Total Chlordane (sum)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Sum of DDD + DDE + DDT	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Sum of Aldrin + Dieldrin	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Organophosphorus Pesticides (OP)										
Dichlorvos	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Demeton-S-methyl	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Monocrotophos	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0				
Dimethoate	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Diazinon	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Chlorpyrifos-methyl	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Parathion-methyl	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0				
Malathion	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Fenthion	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Chlorpyrifos	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Parathion	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0				
Pirimphos-ethyl	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Chlorfenvinphos	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Bromophos-ethyl	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Fenamiphos	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Prothiofos	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Ethion	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Carbophenothion	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Azinphos Methyl	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				

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Date of Sample		10/10/2018	20/08/2018	20/08/2018	20/08/2018	20/08/2018	20/08/2018	20/08/2018	20/08/2018	20/08/2018
Site Name		**LB12**	**BORE 8**	**BORE10A**	**BORE11B**	**BORE12**	**MP # 1**	**MP # 2**	**MP # 3**	**MP # 4**
Organochlorine Pesticide Surrogate										
Dibromo-DDE	%	108	60.7	67.9	78	90				
Organophosphorus Pesticide Surrogate										
DEF	%	93.5	61.2	84.9	88.2	96.6				
Polynuclear Aromatic Hydrocarbons										
Naphthalene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0				
Acenaphthylene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0				
Acenaphthene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0				
Fluorene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0				
Phenanthrene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0				
Anthracene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0				
Fluoranthene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0				
Pyrene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0				
Benz(a)anthracene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0				
Chrysene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0				
Benzo(b+j)fluoranthene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0				
Benzo(k)fluoranthene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0				
Benzo(a)pyrene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Indeno(1.2.3.cd)pyrene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0				
Dibenz(a.h)anthracene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0				
Benzo(g.h.i)perylene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0				

Sum of polycyclic aromatic hydrocarbons	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Benzo(a)pyrene TEQ (zero)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5				
Phenolic Compound Surrogates										
Phenol-d6	%	26.5	17.3	20.9	17.7	19.5				
2-Chlorophenol-D4	%	62.5	42.5	48.1	43	45.1				
2.4.6-Tribromophenol	%	84.5	64.6	85.3	67.1	65.6				
PAH Surrogates										
2-Fluorobiphenyl	%	79.2	86.2	84.7	77.2	84.4				
Anthracene-d10	%	85	88.4	98.8	82.6	86.8				
4-Terphenyl-d14	%	87.4	75.3	80	71.5	74.7				

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	Units									
ALS Sydney Report No.		0								
Date of Sample		10/10/2018	20/08/2018	20/08/2018	20/08/2018	20/08/2018	20/08/2018	20/08/2018	20/08/2018	20/08/2018
Site Name		**LB12**	**BORE 8**	**BORE10A**	**BORE11B**	**BORE12**	**MP # 1**	**MP # 2**	**MP # 3**	**MP # 4**
Total Petroleum Hydrocarbons										
C6 - C9 Fraction	µg/L	<20	<20	<20	<20	<20				
C10 - C14 Fraction	µg/L	<50	<50	<50	<50	<50				
C15 - C28 Fraction	µg/L	<100	<100	<100	<100	<100				
C29 - C36 Fraction	µg/L	<50	<50	<50	<50	<50				
C10 - C36 Fraction (sum)	µg/L	<50	<50	<50	<50	<50				
Total Recoverable Hydrocarbons - NEPM 2013 Fractions										
C6 - C10 Fraction	µg/L	<20	<20	<20	<20	<20				
C6 - C10 Fraction minus BTEX (F1)	µg/L	<20	<20	<20	<20	<20				
>C10 - C16 Fraction	µg/L	<100	<100	<100	<100	<100				
>C16 - C34 Fraction	µg/L	<100	<100	<100	<100	<100				
>C34 - C40 Fraction	µg/L	<100	<100	<100	<100	<100				
>C10 - C40 Fraction (sum)	µg/L	<100	<100	<100	<100	<100				
>C10 - C16 Fraction minus Naphthalene (F2)	µg/L	<100	<100	<100	<100	<100				
BTEXN										
Benzene	µg/L	<1	<1	<1	<1	<1				
Toluene	µg/L	<2	<2	<2	<2	<2				
Ethylbenzene	µg/L	<2	<2	<2	<2	<2				
meta- & para-Xylene	µg/L	<2	<2	<2	<2	<2				
ortho-Xylene	µg/L	<2	<2	<2	<2	<2				
Total Xylenes	µg/L	<2	<2	<2	<2	<2				

Sum of BTEX	µg/L	<1	<1	<1	<1	<1				
Naphthalene	µg/L	<5	<5	<5	<5	<5				
TPH(V)/BTEX Surrogates										
1.2-Dichloroethane-D4	%	100	106	108	101	94.2				
Toluene-D8	%	105	103	97.2	93.2	86.1				
4-Bromofluorobenzene	%	93	96.9	91.9	92.8	87.2				

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Location	Site Reference	CH_4 Reading % v/v
Landfill	G1	0.0030
Landfill	G2	0.0020
Landfill	G3	0.0020
Landfill	G4	0.0020
Landfill	G5	No Access
Landfill	G6	0.0020
Landfill	G7	0.0020
Landfill	G8	No Access
Landfill	G9	No Access
Landfill	G10	0.0020
Landfill	G11	0.0020
Landfill	G12	No Access
Landfill	G13	0.0020
Landfill	G14	No Access
Landfill	G15	0.0020
Landfill	G16	0.0020
Landfill	G17	0.0020
Landfill	G18	0.0020
Landfill	G19	0.0020
Landfill	G20	No Access
Landfill	G21	No Access
Landfill	G22	No Access
Landfill	G23	No Access
Landfill	G24	No Access
Landfill	G25	No Access

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Location	Building Reference	CH_4 Reading % v/v
Office	Window near desk	0.0020
	Power point under desk	0.0020
	Power point near desk	0.0020
	Air conditioner	0.0020
	Window 2 near air conditioner	0.0020
	Window 3	0.0020
	Power Point near printer	0.0010
Meal Room	Window (door hall)	0.0020
	Power point below window (Right side)	0.0020
	Power point below window (Left side)	0.0020
	Air conditioner	0.0020
	Power point (Air conditioner wall)	0.0020
	Power point (Opposite window)	0.0020
	Main Cupboard (2-Door)	0.0010
	Power point (Sink)	0.0010
Toilet 1	Shower/toilet	0.0020
	Drain near lockers	0.0020
Toilet	Shower/toilet	0.0010
	Drain/lockers	0.0010
Training room	Air conditioner (door)	0.0010
	Power point	0.0010
	Window 1 (Right hand side)	0.0020
	Power point (below window)	0.0020
	Window 2 (Right hand side)	0.0020
	Sink Cupboard	0.0010
	Sink power point	0.0010
	Toilet 1 (Right hand side)	0.0020
	Toilet 2 (Left hand side)	0.0020
	Cupboard near toilet	0.0020
	Air conditioner (Left hand side)	0.0010
	Window (left hand side)	0.0020
	Power point under window	0.0020

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Location	Building Reference	CH_4 Reading % v/v
Main Recycle area (Drop Off)	Power point near hose reel	0.0020
	Shower drain below stairs	0.0010
	Power point near exit door	0.0010
	Power point near exit door 2	0.0020
	Power point near exit door 3	0.0010
	Power point downstairs wall	0.0020
	Power point downstairs wall 2	0.0020
Demountable on dump site	Window 1 (Door side)	No Access
	Power point end wall	
	Window 2 (Opposite door)	
	Window 3 (Opposite door)	
	Power point next to window 3	
Portable near skip bins	Window door side	0.0020
	Power point (end wall)	0.0020
	Air conditioner (end wall)	0.0020
	Power point Right hand side	0.0020
	Window Right hand side	0.0020
Re-use Center	Toilets-Drain	0.0020
	Office window	0.0010
	Air conditioner	0.0010
	Power point under desk	0.0010
	Power point back wall	0.0020
	Power point (right hand side wall)	0.0010
	Conference room window	0.0020
	Power point behind fridge	0.0030
	Kitchen sink cupboard	0.0020
	Power point near sink	0.0020
	Power point back wall	0.0020
	Power point (side wall entrance)	0.0020
Gatehouse Building	Cupboard wall 1	0.0020
	Radio power point wall 2	0.0020
	Air conditioner wall 3	0.0020
	Power point wall 3	0.0020
	Photocopier wall 4	0.0020
	Computer wall 5	0.0020

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Location	Building Reference	CH_4 Reading % v/v
Meeting Room	Door wall 1	0.0020
	Window wall 2	0.0020
	Power point wall 2	0.0010
	Cupboard wall 3	0.0010
	Power point wall 4	0.0020
	Window wall 2	0.0020
Office 1	Power point wall 4	0.0020
Hallway 1	Power point wall 1	0.0020
Kitchen	Fridge power point wall 1	0.0020
	Sink power point wall 2	0.0020
	Sink cupboard wall 2	0.0020
	Lockers wall 3	0.0020
Toilets	Men's Toilets	0.0020
	Ladies Toilets	0.0020
	Shower	0.0010
	Sink	0.0020
Hallway 2	Power point	0.0020
Re-use Shed Storage	Power point (Right side wall)	0.0020
	Power point (Right side wall 2)	0.0020
	Power point (Back wall 1)	0.0020
	Power point (Back wall 2)	0.0020

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BIOFILTER CH_4 Reading %v/v

North Corner

0.0030	0.0020	0.0020
0.0020	0.0030	0.0030

Front of Buildings

0.0020	0.0040	0.0020
0.0030	0.0050	0.0070

GAS MONITORING BORES

Location	Reference	CH_4 Reading % v/v
Gas Bore	MP1	2.3000
Gas Bore	MP2	2.3000
Gas Bore	MP3	0.0020
Gas Bore	MP4	0.0020

METHODS OF WATER ANALYSIS

NATA accreditation covers the following test

TEST	METHOD	Measure of Uncertainty
Electrical Conductivity uS/cm	APHA 2510 B	2.0%
pH value	APHA 4500 H	0.10 pH Units
Total Suspended Solids (mg/l)	APHA 2540 D	± 5.0%
Total Dissolved Soilds (mg/l)	APHA 2540 C	± 8.8%

NATA Accreditation does not cover the performance of this test.

TEST
Temperature Field
CH4 Readings

The remaining analysis performed at ALS Environmental, 277-289 Woodpark Rd, Smithfield

In accordance with “Standard Methods for the Examination of Water & Wastewater”
APHA, AWWA, WEF and Water & Wastewater
Examination Manual (V. Dean Adams)