APPENDIX

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LABORATORY ANALYSIS REPORTS

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Stantec

Stantec Australia Pty Ltd
Level 22, 570 Bourke Street
Melbourne
VIC 3000

Attention: **Julian Brown**

Report **887921-W**
Project name SBWMF WATER MONITORING
Project ID CW1121900
Received Date May 12, 2022

Client Sample ID			**GW2-3**	**GW2-12**	**GW3-3**	**GW3-12**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**M22-My0029257**	**M22-My0029258**	**M22-My0029259**	**M22-My0029260**
Date Sampled			**May 12, 2022**	**May 12, 2022**	**May 12, 2022**	**May 12, 2022**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	96	116	90	88
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			GW2-3	GW2-12	GW3-3	GW3-12
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029257	M22-My0029258	M22-My0029259	M22-My0029260
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	123	73	119	104
p-Terphenyl-d14 (surr.)	1	%	129	78	138	116
Organochlorine Pesticides						
Chlordanes - Total	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
4.4'-DDD	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
4.4'-DDE	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
4.4'-DDT	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
a-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
b-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
d-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
g-HCH (Lindane)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Heptachlor epoxide	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Hexachlorobenzene	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Toxaphene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dibutylchlorendate (surr.)	1	%	91	81	114	89
Tetrachloro-m-xylene (surr.)	1	%	115	78	114	95
Organophosphorus Pesticides						
Azinphos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Bolstar	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorfenvinphos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Chlorpyrifos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorpyrifos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Coumaphos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Demeton-S	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Demeton-O	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Diazinon	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dimethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Disulfoton	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
EPN	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002

Client Sample ID			GW2-3	GW2-12	GW3-3	GW3-12
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029257	M22-My0029258	M22-My0029259	M22-My0029260
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Ethoprop	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Malathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Merphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Mevinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Monocrotophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Naled	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Omethoate	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phorate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Pyrazophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ronnel	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Terbufos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tokuthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Trichloronate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Triphenylphosphate (surr.)	1	%	114	131	102	77
Polychlorinated Biphenyls						
Aroclor-1016	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1221	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1232	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1242	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1248	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1254	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1260	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Total PCB*	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Dibutylchlorendate (surr.)	1	%	91	81	114	89
Tetrachloro-m-xylene (surr.)	1	%	115	78	114	95
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003

Client Sample ID			GW2-3	GW2-12	GW3-3	GW3-12
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029257	M22-My0029258	M22-My0029259	M22-My0029260
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	< 0.006
Total cresols*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Phenol-d6 (surr.)	1	%	76	97	61	60
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Ammonia (as N)	0.01	mg/L	0.02	0.02	< 0.01	< 0.01
Chemical Oxygen Demand (COD)	25	mg/L	64	140	< 25	< 25
Chloride	1	mg/L	730	7500	50	110
Nitrate & Nitrite (as N)	0.05	mg/L	1.5	2.4	7.3	0.80
Nitrate (as N)	0.02	mg/L	1.5	2.3	7.3	0.79
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	< 0.01	0.44	0.08	0.06
Phosphorus reactive (as P)	0.01	mg/L	< 0.01	0.43	< 0.01	0.05
Sulphate (as SO4)	5	mg/L	96	870	< 5	15
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	1400	450	130	400
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	2.0	1.9	2.5	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	3.5	4.3	9.8	0.8
Total Organic Carbon	5	mg/L	< 5	< 5	5.1	< 5
Total Suspended Solids Dried at 103°C–105°C	5	mg/L	8.1	20	< 5	5.7
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	< 20	50	< 20	< 20
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	< 20	< 20
Total Alkalinity (as CaCO3)	20	mg/L	< 20	50	< 20	< 20
Heavy Metals						
Boron	0.05	mg/L	< 0.05	0.35	< 0.05	< 0.05
Chromium	0.001	mg/L	0.003	< 0.001	0.009	< 0.001
Copper	0.001	mg/L	0.006	0.004	0.006	0.001
Lead	0.001	mg/L	0.010	< 0.001	0.009	< 0.001
Nickel	0.001	mg/L	0.008	0.064	0.006	0.005
Zinc	0.005	mg/L	0.027	0.34	0.036	0.055
Alkali Metals						
Calcium	0.5	mg/L	46	380	1.6	12
Magnesium	0.5	mg/L	45	420	2.3	9.3
Potassium	0.5	mg/L	5.3	41	< 0.5	11
Sodium	0.5	mg/L	380	4000	31	90
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	0.22	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.02	< 0.01	0.26	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	[N09]0.02	< 0.01	0.26	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	[N09]0.06	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	[N09]0.06	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			GW2-3	GW2-12	GW3-3	GW3-12
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029257	M22-My0029258	M22-My0029259	M22-My0029260
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	95	99	99	114
13C5-PFPeA (surr.)	1	%	111	106	105	129
13C5-PFHxA (surr.)	1	%	102	101	103	116
13C4-PFHpA (surr.)	1	%	89	89	91	100
13C8-PFOA (surr.)	1	%	90	95	82	102
13C5-PFNA (surr.)	1	%	79	97	59	90
13C6-PFDA (surr.)	1	%	73	120	54	84
13C2-PFUnDA (surr.)	1	%	51	90	25	56
13C2-PFDoDA (surr.)	1	%	77	159	46	92
13C2-PFTeDA (surr.)	1	%	69	142	92	165
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	24	11	23	15
D3-N-MeFOSA (surr.)	1	%	23	41	41	21
D5-N-EtFOSA (surr.)	1	%	11	11	10	25
D7-N-MeFOSE (surr.)	1	%	32	19	32	20
D9-N-EtFOSE (surr.)	1	%	16	14	15	14
D5-N-EtFOSAA (surr.)	1	%	16	33	18	20
D3-N-MeFOSAA (surr.)	1	%	27	41	11	30
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.07	< 0.01	0.55	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	[N09]0.02	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]0.02	< 0.01	[N09]0.10	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]0.01	< 0.01	[N09]0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	106	106	107	124
18O2-PFHxS (surr.)	1	%	89	104	86	103
13C8-PFOS (surr.)	1	%	89	118	63	97

Client Sample ID			GW2-3	GW2-12	GW3-3	GW3-12
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029257	M22-My0029258	M22-My0029259	M22-My0029260
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	92	92	98	100
13C2-6:2 FTSA (surr.)	1	%	99	93	88	111
13C2-8:2 FTSA (surr.)	1	%	66	88	42	78
13C2-10:2 FTSA (surr.)	1	%	77	162	36	87
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	0.03	< 0.01	0.11	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.01	< 0.01	0.07	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.03	< 0.01	0.17	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.14	< 0.05	1.52	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	0.15	< 0.1	1.54	< 0.1

Client Sample ID			GW10-12	GW11-12	GW12-12	GW12-30
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029261	M22-My0029262	M22-My0029263	M22-My0029264
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	0.02	mg/L	< 0.02	3.6	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	0.06	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	4.0	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	4.0	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	88	112	103	107

Client Sample ID			GW10-12	GW11-12	GW12-12	GW12-30
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029261	M22-My0029262	M22-My0029263	M22-My0029264
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	99	140	134	65
p-Terphenyl-d14 (surr.)	1	%	122	82	79	94
Organochlorine Pesticides						
Chlordanes - Total	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
4.4'-DDD	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
4.4'-DDE	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
4.4'-DDT	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
a-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
b-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
d-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
g-HCH (Lindane)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Heptachlor epoxide	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Hexachlorobenzene	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Toxaphene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dibutylchlorendate (surr.)	1	%	55	96	120	63
Tetrachloro-m-xylene (surr.)	1	%	100	134	134	72

Client Sample ID			GW10-12	GW11-12	GW12-12	GW12-30
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029261	M22-My0029262	M22-My0029263	M22-My0029264
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Azinphos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Bolstar	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorfenvinphos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Chlorpyrifos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorpyrifos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Coumaphos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Demeton-S	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Demeton-O	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Diazinon	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dimethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Disulfoton	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
EPN	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethoprop	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Malathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Merphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Mevinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Monocrotophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Naled	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Omethoate	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phorate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Pyrazophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ronnel	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Terbufos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tokuthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Trichloronate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Triphenylphosphate (surr.)	1	%	75	107	105	85
Polychlorinated Biphenyls						
Aroclor-1016	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1221	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1232	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1242	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1248	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1254	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1260	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Total PCB*	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Dibutylchlorendate (surr.)	1	%	55	96	120	63
Tetrachloro-m-xylene (surr.)	1	%	100	134	134	72

Client Sample ID			GW10-12	GW11-12	GW12-12	GW12-30
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029261	M22-My0029262	M22-My0029263	M22-My0029264
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	< 0.006
Total cresols*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Phenol-d6 (surr.)	1	%	46	76	50	52
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Ammonia (as N)	0.01	mg/L	< 0.01	< 0.01	< 0.01	0.05
Chemical Oxygen Demand (COD)	25	mg/L	< 25	680	< 25	< 25
Chloride	1	mg/L	9.0	110	17	5.9
Nitrate & Nitrite (as N)	0.05	mg/L	0.95	< 0.05	0.40	2.3
Nitrate (as N)	0.02	mg/L	0.94	< 0.02	0.39	2.3
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.02	0.16	0.04	0.04
Phosphorus reactive (as P)	0.01	mg/L	< 0.01	< 0.01	0.01	0.03
Sulphate (as SO4)	5	mg/L	< 5	18	18	< 5
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	70	390	480	78
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	1.1	1.0	0.3	1.0
Total Nitrogen (as N)*	0.2	mg/L	2.05	1	0.7	3.3
Total Organic Carbon	5	mg/L	< 5	190	< 5	< 5
Total Suspended Solids Dried at 103°C–105°C	5	mg/L	< 5	6.2	< 5	< 5
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	< 20	220	< 20	< 20
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	< 20	< 20
Total Alkalinity (as CaCO3)	20	mg/L	< 20	220	< 20	< 20
Heavy Metals						
Boron	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Chromium	0.001	mg/L	< 0.001	0.028	< 0.001	< 0.001
Copper	0.001	mg/L	0.015	0.010	0.006	< 0.001
Lead	0.001	mg/L	0.002	0.003	0.001	< 0.001

Client Sample ID			GW10-12	GW11-12	GW12-12	GW12-30
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029261	M22-My0029262	M22-My0029263	M22-My0029264
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Heavy Metals						
Nickel	0.001	mg/L	0.001	0.003	0.001	0.001
Zinc	0.005	mg/L	0.026	0.030	0.026	0.008
Alkali Metals						
Calcium	0.5	mg/L	2.1	40	66	7.9
Magnesium	0.5	mg/L	< 0.5	6.9	3.9	0.9
Potassium	0.5	mg/L	< 0.5	64	6.6	6.5
Sodium	0.5	mg/L	3.6	56	18	4.2
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	0.06	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.05	0.10	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.03	0.06	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	0.02	0.03	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	0.01	[N09]0.02	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	73	87	90	96
13C5-PFPeA (surr.)	1	%	86	102	97	111
13C5-PFHxA (surr.)	1	%	77	98	90	98
13C4-PFHpA (surr.)	1	%	65	93	82	86
13C8-PFOA (surr.)	1	%	61	99	80	91
13C5-PFNA (surr.)	1	%	55	99	66	88
13C6-PFDA (surr.)	1	%	38	113	66	86
13C2-PFUnDA (surr.)	1	%	33	87	37	59
13C2-PFDoDA (surr.)	1	%	72	152	61	72
13C2-PFTeDA (surr.)	1	%	85	131	69	41
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	24	44	19	17
D3-N-MeFOSA (surr.)	1	%	82	10	23	18
D5-N-EtFOSA (surr.)	1	%	66	11	22	22
D7-N-MeFOSE (surr.)	1	%	95	70	36	15
D9-N-EtFOSE (surr.)	1	%	109	12	24	18
D5-N-EtFOSAA (surr.)	1	%	25	21	11	18
D3-N-MeFOSAA (surr.)	1	%	25	46	15	30

Client Sample ID			GW10-12	GW11-12	GW12-12	GW12-30
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029261	M22-My0029262	M22-My0029263	M22-My0029264
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	0.06	[N09]0.06	0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	0.11	[N09]0.05	[N09]0.02	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	80	114	101	102
18O2-PFHxS (surr.)	1	%	59	94	86	94
13C8-PFOS (surr.)	1	%	51	101	67	103
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	67	146	79	90
13C2-6:2 FTSA (surr.)	1	%	102	109	87	97
13C2-8:2 FTSA (surr.)	1	%	50	98	53	74
13C2-10:2 FTSA (surr.)	1	%	101	101	50	84
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	0.17	0.11	0.03	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.12	0.07	0.02	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.18	0.13	0.03	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.28	0.39	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	0.28	0.4	< 0.1	< 0.1

Client Sample ID			GW15-3	GW15-12	GW16-12	GW16-30
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029266	M22-My0029267	M22-My0029268	M22-My0029269
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			GW15-3	GW15-12	GW16-12	GW16-30
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029266	M22-My0029267	M22-My0029268	M22-My0029269
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	96	87	91	108
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	57	52	65	84
p-Terphenyl-d14 (surr.)	1	%	100	141	146	89
Organochlorine Pesticides						
Chlordanes - Total	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
4.4'-DDD	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
4.4'-DDE	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
4.4'-DDT	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
a-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
b-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
d-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
g-HCH (Lindane)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Heptachlor epoxide	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002

Client Sample ID			GW15-3	GW15-12	GW16-12	GW16-30
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029266	M22-My0029267	M22-My0029268	M22-My0029269
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Hexachlorobenzene	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Toxaphene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dibutylchlorendate (surr.)	1	%	69	83	60	87
Tetrachloro-m-xylene (surr.)	1	%	69	58	124	73
Organophosphorus Pesticides						
Azinphos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Bolstar	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorfenvinphos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Chlorpyrifos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorpyrifos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Coumaphos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Demeton-S	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Demeton-O	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Diazinon	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dimethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Disulfoton	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
EPN	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethoprop	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Malathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Merphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Mevinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Monocrotophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Naled	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Omethoate	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phorate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Pyrazophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ronnel	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Terbufos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tokuthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Trichloronate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Triphenylphosphate (surr.)	1	%	71	116	99	57

Client Sample ID			GW15-3	GW15-12	GW16-12	GW16-30
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029266	M22-My0029267	M22-My0029268	M22-My0029269
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1221	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1232	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1242	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1248	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1254	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1260	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Total PCB*	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Dibutylchlorendate (surr.)	1	%	69	83	60	87
Tetrachloro-m-xylene (surr.)	1	%	69	58	124	73
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	< 0.006
Total cresols*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Phenol-d6 (surr.)	1	%	44	51	27	31
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Ammonia (as N)	0.01	mg/L	0.12	< 0.01	0.02	< 0.01
Chemical Oxygen Demand (COD)	25	mg/L	< 25	< 25	< 25	< 25
Chloride	1	mg/L	110	820	74	31
Nitrate & Nitrite (as N)	0.05	mg/L	0.28	0.26	0.85	0.12
Nitrate (as N)	0.02	mg/L	0.27	0.25	0.85	0.11
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.02	0.01	< 0.01	< 0.01
Phosphorus reactive (as P)	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Sulphate (as SO4)	5	mg/L	19	110	< 5	28
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	220	1500	180	130
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.6	1.8	< 0.2	0.5
Total Nitrogen (as N)*	0.2	mg/L	0.88	2.06	0.85	0.62
Total Organic Carbon	5	mg/L	< 5	< 5	< 5	< 5
Total Suspended Solids Dried at 103°C–105°C	5	mg/L	6.5	8.2	< 5	< 5

Client Sample ID			GW15-3	GW15-12	GW16-12	GW16-30
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029266	M22-My0029267	M22-My0029268	M22-My0029269
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	< 20	24	38	< 20
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	< 20	< 20
Total Alkalinity (as CaCO3)	20	mg/L	< 20	24	38	< 20
Heavy Metals						
Boron	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Chromium	0.001	mg/L	0.011	< 0.001	< 0.001	< 0.001
Copper	0.001	mg/L	0.021	0.007	0.036	0.008
Lead	0.001	mg/L	0.009	0.001	0.002	< 0.001
Nickel	0.001	mg/L	0.011	0.011	0.005	0.004
Zinc	0.005	mg/L	0.037	0.030	0.087	0.025
Alkali Metals						
Calcium	0.5	mg/L	13	44	11	2.2
Magnesium	0.5	mg/L	14	54	0.6	1.3
Potassium	0.5	mg/L	5.8	9.3	< 0.5	5.0
Sodium	0.5	mg/L	100	420	47	28
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	0.06	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	0.09	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	[N09]0.07	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	[N09]0.05	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	[N09]0.08	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	94	91	90	104
13C5-PFPeA (surr.)	1	%	101	107	93	90
13C5-PFHxA (surr.)	1	%	98	95	94	106
13C4-PFHpA (surr.)	1	%	88	87	88	88
13C8-PFOA (surr.)	1	%	95	89	88	91
13C5-PFNA (surr.)	1	%	74	87	81	85
13C6-PFDA (surr.)	1	%	63	89	88	91
13C2-PFUnDA (surr.)	1	%	36	47	42	65
13C2-PFDoDA (surr.)	1	%	38	38	47	101
13C2-PFTeDA (surr.)	1	%	21	25	38	135
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			GW15-3	GW15-12	GW16-12	GW16-30
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029266	M22-My0029267	M22-My0029268	M22-My0029269
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	14	42	23	26
D3-N-MeFOSA (surr.)	1	%	17	26	12	33
D5-N-EtFOSA (surr.)	1	%	21	42	29	13
D7-N-MeFOSE (surr.)	1	%	44	16	23	11
D9-N-EtFOSE (surr.)	1	%	34	28	21	20
D5-N-EtFOSAA (surr.)	1	%	13	20	15	20
D3-N-MeFOSAA (surr.)	1	%	22	30	27	31
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.01	< 0.01	0.05	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	[N09]0.02	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	[N09]0.09	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	[N09]0.04	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	105	97	94	112
18O2-PFHxS (surr.)	1	%	98	95	89	95
13C8-PFOS (surr.)	1	%	79	101	95	94
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	89	82	87	101
13C2-6:2 FTSA (surr.)	1	%	106	107	108	93
13C2-8:2 FTSA (surr.)	1	%	57	74	66	76
13C2-10:2 FTSA (surr.)	1	%	35	50	48	108
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	0.13	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	0.12	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	0.21	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	0.53	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	0.55	< 0.1

Client Sample ID			WW6	WW13	GWILP	SW12
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029270	M22-My0029271	M22-My0029272	M22-My0029273
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	-	-
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	-	-
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	-	-
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	-	-
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	-	-
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	-	-
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	-	-
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	-	-
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	-	-
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	-	-
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	-	-
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	-	-
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	-	-
Toluene	0.001	mg/L	< 0.001	< 0.001	-	-
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	-	-
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	-	-
o-Xylene	0.001	mg/L	< 0.001	< 0.001	-	-
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	-	-
4-Bromofluorobenzene (surr.)	1	%	107	100	-	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	-	-
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	-	-
Anthracene	0.001	mg/L	< 0.001	< 0.001	-	-
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	-	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	-	-
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	-	-
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	-	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	-	-
Chrysene	0.001	mg/L	< 0.001	< 0.001	-	-
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	-	-
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	-	-
Fluorene	0.001	mg/L	< 0.001	< 0.001	-	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	-	-
Naphthalene	0.001	mg/L	< 0.001	< 0.001	-	-
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	-	-
Pyrene	0.001	mg/L	< 0.001	< 0.001	-	-
Total PAH*	0.001	mg/L	< 0.001	< 0.001	-	-
2-Fluorobiphenyl (surr.)	1	%	74	117	-	-
p-Terphenyl-d14 (surr.)	1	%	80	124	-	-
Organochlorine Pesticides						
Chlordanes - Total	0.002	mg/L	< 0.002	< 0.002	-	-
4.4'-DDD	0.0002	mg/L	< 0.0002	< 0.0002	-	-
4.4'-DDE	0.0002	mg/L	< 0.0002	< 0.0002	-	-
4.4'-DDT	0.0002	mg/L	< 0.0002	< 0.0002	-	-
a-HCH	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Aldrin	0.0002	mg/L	< 0.0002	< 0.0002	-	-
b-HCH	0.0002	mg/L	< 0.0002	< 0.0002	-	-

Client Sample ID			WW6	WW13	GWILP	SW12
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029270	M22-My0029271	M22-My0029272	M22-My0029273
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
d-HCH	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Dieldrin	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Endosulfan I	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Endosulfan II	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Endosulfan sulphate	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Endrin	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Endrin aldehyde	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Endrin ketone	0.0002	mg/L	< 0.0002	< 0.0002	-	-
g-HCH (Lindane)	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Heptachlor	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Heptachlor epoxide	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Hexachlorobenzene	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Methoxychlor	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Toxaphene	0.005	mg/L	< 0.005	< 0.005	-	-
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	-	-
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	-	-
Dibutylchlorendate (surr.)	1	%	76	92	-	-
Tetrachloro-m-xylene (surr.)	1	%	62	102	-	-
Organophosphorus Pesticides						
Azinphos-methyl	0.002	mg/L	< 0.002	< 0.002	-	-
Bolstar	0.002	mg/L	< 0.002	< 0.002	-	-
Chlorfenvinphos	0.02	mg/L	< 0.02	< 0.02	-	-
Chlorpyrifos	0.002	mg/L	< 0.002	< 0.002	-	-
Chlorpyrifos-methyl	0.002	mg/L	< 0.002	< 0.002	-	-
Coumaphos	0.02	mg/L	< 0.02	< 0.02	-	-
Demeton-S	0.002	mg/L	< 0.002	< 0.002	-	-
Demeton-O	0.002	mg/L	< 0.002	< 0.002	-	-
Diazinon	0.002	mg/L	< 0.002	< 0.002	-	-
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	-	-
Dimethoate	0.002	mg/L	< 0.002	< 0.002	-	-
Disulfoton	0.002	mg/L	< 0.002	< 0.002	-	-
EPN	0.002	mg/L	< 0.002	< 0.002	-	-
Ethion	0.002	mg/L	< 0.002	< 0.002	-	-
Ethoprop	0.002	mg/L	< 0.002	< 0.002	-	-
Ethyl parathion	0.002	mg/L	< 0.002	< 0.002	-	-
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	-	-
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	-	-
Fenthion	0.002	mg/L	< 0.002	< 0.002	-	-
Malathion	0.002	mg/L	< 0.002	< 0.002	-	-
Merphos	0.002	mg/L	< 0.002	< 0.002	-	-
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	-	-
Mevinphos	0.002	mg/L	< 0.002	< 0.002	-	-
Monocrotophos	0.002	mg/L	< 0.002	< 0.002	-	-
Naled	0.002	mg/L	< 0.002	< 0.002	-	-
Omethoate	0.02	mg/L	< 0.02	< 0.02	-	-
Phorate	0.002	mg/L	< 0.002	< 0.002	-	-
Pirimiphos-methyl	0.02	mg/L	< 0.02	< 0.02	-	-

Client Sample ID			WW6	WW13	GWILP	SW12
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029270	M22-My0029271	M22-My0029272	M22-My0029273
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Pyrazophos	0.002	mg/L	< 0.002	< 0.002	-	-
Ronnel	0.002	mg/L	< 0.002	< 0.002	-	-
Terbufos	0.002	mg/L	< 0.002	< 0.002	-	-
Tetrachlorvinphos	0.002	mg/L	< 0.002	< 0.002	-	-
Tokuthion	0.002	mg/L	< 0.002	< 0.002	-	-
Trichloronate	0.002	mg/L	< 0.002	< 0.002	-	-
Triphenylphosphate (surr.)	1	%	53	72	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.005	mg/L	< 0.005	< 0.005	-	-
Aroclor-1221	0.005	mg/L	< 0.005	< 0.005	-	-
Aroclor-1232	0.005	mg/L	< 0.005	< 0.005	-	-
Aroclor-1242	0.005	mg/L	< 0.005	< 0.005	-	-
Aroclor-1248	0.005	mg/L	< 0.005	< 0.005	-	-
Aroclor-1254	0.005	mg/L	< 0.005	< 0.005	-	-
Aroclor-1260	0.005	mg/L	< 0.005	< 0.005	-	-
Total PCB*	0.005	mg/L	< 0.005	< 0.005	-	-
Dibutylchlorendate (surr.)	1	%	76	92	-	-
Tetrachloro-m-xylene (surr.)	1	%	62	102	-	-
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	-	-
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	-	-
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	-	-
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	-	-
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	-	-
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	-	-
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	-	-
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	-	-
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	-	-
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	-	-
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	-	-
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	-	-
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	-	-
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	-	-
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	-	-
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	-	-
Total cresols*	0.01	mg/L	< 0.01	< 0.01	-	-
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	-	-
Dinoseb	0.1	mg/L	< 0.1	< 0.1	-	-
Phenol	0.003	mg/L	< 0.003	< 0.003	-	-
Phenol-d6 (surr.)	1	%	42	62	-	-
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	-	-
Ammonia (as N)	0.01	mg/L	1.7	0.02	680	0.12
Chemical Oxygen Demand (COD)	25	mg/L	450	140	2300	37
Chloride	1	mg/L	24000	6100	1500	310
Nitrate & Nitrite (as N)	0.05	mg/L	0.49	0.58	< 5	0.45
Nitrate (as N)	0.02	mg/L	0.48	0.57	< 5	0.41

Client Sample ID			WW6	WW13	GWILP	SW12
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029270	M22-My0029271	M22-My0029272	M22-My0029273
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 2	0.04
Phosphate total (as P)	0.01	mg/L	0.53	0.11	4.9	0.02
Phosphorus reactive (as P)	0.01	mg/L	0.45	0.02	0.59	< 0.01
Sulphate (as SO4)	5	mg/L	2800	650	< 50	55
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	4100	12000	4800	790
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	1.8	2.3	32	2.0
Total Nitrogen (as N)*	0.2	mg/L	2.29	2.88	32	2.45
Total Organic Carbon	5	mg/L	5.2	< 5	780	11
Total Suspended Solids Dried at 103°C–105°C	5	mg/L	210	94	8.8	6.2
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	38	< 20	3500	75
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	< 20	< 20
Total Alkalinity (as CaCO3)	20	mg/L	38	< 20	3500	84
Heavy Metals						
Boron	0.05	mg/L	0.64	0.24	2.5	0.11
Chromium	0.001	mg/L	0.003	0.023	0.21	< 0.001
Copper	0.001	mg/L	0.003	0.007	< 0.01	0.002
Lead	0.001	mg/L	0.001	0.029	< 0.01	< 0.001
Nickel	0.001	mg/L	0.79	0.17	0.11	0.002
Zinc	0.005	mg/L	0.081	0.67	0.21	< 0.005
Alkali Metals						
Calcium	0.5	mg/L	1500	360	32	34
Magnesium	0.5	mg/L	1900	370	32	23
Potassium	0.5	mg/L	270	29	390	23
Sodium	0.5	mg/L	14000	2800	1300	170
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	-	-
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.01	< 0.01	-	-
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	-	-
13C4-PFBA (surr.)	1	%	104	105	-	-
13C5-PFPeA (surr.)	1	%	112	102	-	-
13C5-PFHxA (surr.)	1	%	105	102	-	-
13C4-PFHpA (surr.)	1	%	87	92	-	-
13C8-PFOA (surr.)	1	%	79	89	-	-
13C5-PFNA (surr.)	1	%	56	77	-	-
13C6-PFDA (surr.)	1	%	38	83	-	-
13C2-PFUnDA (surr.)	1	%	15	57	-	-
13C2-PFDoDA (surr.)	1	%	11	88	-	-
13C2-PFTeDA (surr.)	1	%	13	88	-	-

Client Sample ID			WW6	WW13	GWILP	SW12
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029270	M22-My0029271	M22-My0029272	M22-My0029273
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	-	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	-	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	-	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	-	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	-	-
13C8-FOSA (surr.)	1	%	25	32	-	-
D3-N-MeFOSA (surr.)	1	%	37	27	-	-
D5-N-EtFOSA (surr.)	1	%	21	19	-	-
D7-N-MeFOSE (surr.)	1	%	33	16	-	-
D9-N-EtFOSE (surr.)	1	%	38	14	-	-
D5-N-EtFOSAA (surr.)	1	%	27	18	-	-
D3-N-MeFOSAA (surr.)	1	%	22	30	-	-
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	-	-
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	[N09]0.01	-	-
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	-	-
13C3-PFBS (surr.)	1	%	116	107	-	-
18O2-PFHxS (surr.)	1	%	89	93	-	-
13C8-PFOS (surr.)	1	%	59	93	-	-
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	-	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	0.07	< 0.05	-	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	-	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	-	-
13C2-4:2 FTSA (surr.)	1	%	92	104	-	-
13C2-6:2 FTSA (surr.)	1	%	84	93	-	-
13C2-8:2 FTSA (surr.)	1	%	30	75	-	-
13C2-10:2 FTSA (surr.)	1	%	19	83	-	-
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	0.01	-	-
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	0.01	-	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	0.01	-	-
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.08	< 0.05	-	-
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	-	-

Client Sample ID			SW13	SW14	SWSTG1&2	LP01
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029274	M22-My0029275	M22-My0029276	M22-My0029277
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	0.02	mg/L	-	-	-	< 4
TRH C10-C14	0.05	mg/L	-	-	-	1700
TRH C15-C28	0.1	mg/L	-	-	-	21000
TRH C29-C36	0.1	mg/L	-	-	-	18000
TRH C10-C36 (Total)	0.1	mg/L	-	-	-	40700
Naphthalene[N02]	0.01	mg/L	-	-	-	< 2
TRH C6-C10	0.02	mg/L	-	-	-	< 4
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	-	-	-	< 4
TRH >C10-C16	0.05	mg/L	-	-	-	3000
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	-	-	-	3000
TRH >C16-C34	0.1	mg/L	-	-	-	35000
TRH >C34-C40	0.1	mg/L	-	-	-	7000
TRH >C10-C40 (total)*	0.1	mg/L	-	-	-	45000
BTEX						
Benzene	0.001	mg/L	-	-	-	< 0.2
Toluene	0.001	mg/L	-	-	-	< 0.2
Ethylbenzene	0.001	mg/L	-	-	-	< 0.2
m&p-Xylenes	0.002	mg/L	-	-	-	< 0.4
o-Xylene	0.001	mg/L	-	-	-	< 0.2
Xylenes - Total*	0.003	mg/L	-	-	-	< 0.6
4-Bromofluorobenzene (surr.)	1	%	-	-	-	121
Organochlorine Pesticides						
Chlordanes - Total	0.002	mg/L	-	-	-	< 10
4.4'-DDD	0.0002	mg/L	-	-	-	< 10
4.4'-DDE	0.0002	mg/L	-	-	-	< 10
4.4'-DDT	0.0002	mg/L	-	-	-	< 10
a-HCH	0.0002	mg/L	-	-	-	< 10
Aldrin	0.0002	mg/L	-	-	-	< 10
b-HCH	0.0002	mg/L	-	-	-	< 10
d-HCH	0.0002	mg/L	-	-	-	< 10
Dieldrin	0.0002	mg/L	-	-	-	< 10
Endosulfan I	0.0002	mg/L	-	-	-	< 10
Endosulfan II	0.0002	mg/L	-	-	-	< 10
Endosulfan sulphate	0.0002	mg/L	-	-	-	< 10
Endrin	0.0002	mg/L	-	-	-	< 10
Endrin aldehyde	0.0002	mg/L	-	-	-	< 10
Endrin ketone	0.0002	mg/L	-	-	-	< 10
g-HCH (Lindane)	0.0002	mg/L	-	-	-	< 10
Heptachlor	0.0002	mg/L	-	-	-	< 10
Heptachlor epoxide	0.0002	mg/L	-	-	-	< 10
Hexachlorobenzene	0.0002	mg/L	-	-	-	< 10
Methoxychlor	0.0002	mg/L	-	-	-	< 10
Toxaphene	0.005	mg/L	-	-	-	< 1
Aldrin and Dieldrin (Total)*	0.0002	mg/L	-	-	-	< 10
DDT + DDE + DDD (Total)*	0.0002	mg/L	-	-	-	< 10
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	-	-	-	< 10
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	-	-	-	< 10
Dibutylchlorendate (surr.)	1	%	-	-	-	59
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	85

Client Sample ID			SW13	SW14	SWSTG1&2	LP01
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029274	M22-My0029275	M22-My0029276	M22-My0029277
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Azinphos-methyl	0.002	mg/L	-	-	-	< 200
Bolstar	0.002	mg/L	-	-	-	< 200
Chlorfenvinphos	0.02	mg/L	-	-	-	< 200
Chlorpyrifos	0.002	mg/L	-	-	-	< 200
Chlorpyrifos-methyl	0.002	mg/L	-	-	-	< 200
Coumaphos	0.02	mg/L	-	-	-	< 200
Demeton-S	0.002	mg/L	-	-	-	< 200
Demeton-O	0.002	mg/L	-	-	-	< 200
Diazinon	0.002	mg/L	-	-	-	< 200
Dichlorvos	0.002	mg/L	-	-	-	< 200
Dimethoate	0.002	mg/L	-	-	-	< 200
Disulfoton	0.002	mg/L	-	-	-	< 200
EPN	0.002	mg/L	-	-	-	< 200
Ethion	0.002	mg/L	-	-	-	< 200
Ethoprop	0.002	mg/L	-	-	-	< 200
Ethyl parathion	0.002	mg/L	-	-	-	< 200
Fenitrothion	0.002	mg/L	-	-	-	< 200
Fensulfothion	0.002	mg/L	-	-	-	< 200
Fenthion	0.002	mg/L	-	-	-	< 200
Malathion	0.002	mg/L	-	-	-	< 200
Merphos	0.002	mg/L	-	-	-	< 200
Methyl parathion	0.002	mg/L	-	-	-	< 200
Mevinphos	0.002	mg/L	-	-	-	< 200
Monocrotophos	0.002	mg/L	-	-	-	< 200
Naled	0.002	mg/L	-	-	-	< 200
Omethoate	0.02	mg/L	-	-	-	< 200
Phorate	0.002	mg/L	-	-	-	< 200
Pirimiphos-methyl	0.02	mg/L	-	-	-	< 200
Pyrazophos	0.002	mg/L	-	-	-	< 200
Ronnel	0.002	mg/L	-	-	-	< 200
Terbufos	0.002	mg/L	-	-	-	< 200
Tetrachlorvinphos	0.002	mg/L	-	-	-	< 200
Tokuthion	0.002	mg/L	-	-	-	< 200
Trichloronate	0.002	mg/L	-	-	-	< 200
Triphenylphosphate (surr.)	1	%	-	-	-	65
Polychlorinated Biphenyls						
Aroclor-1016	0.005	mg/L	-	-	-	< 1
Aroclor-1221	0.005	mg/L	-	-	-	< 1
Aroclor-1232	0.005	mg/L	-	-	-	< 1
Aroclor-1242	0.005	mg/L	-	-	-	< 1
Aroclor-1248	0.005	mg/L	-	-	-	< 1
Aroclor-1254	0.005	mg/L	-	-	-	< 1
Aroclor-1260	0.005	mg/L	-	-	-	< 1
Total PCB*	0.005	mg/L	-	-	-	< 1
Dibutylchlorendate (surr.)	1	%	-	-	-	59
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	85

Client Sample ID			SW13	SW14	SWSTG1&2	LP01
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029274	M22-My0029275	M22-My0029276	M22-My0029277
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Ammonia (as N)	0.01	mg/L	0.12	0.04	0.02	-
Chemical Oxygen Demand (COD)	25	mg/L	< 25	28	< 25	-
Chloride	1	mg/L	360	120	120	-
Nitrate & Nitrite (as N)	0.05	mg/L	0.45	1.5	0.08	-
Nitrate (as N)	0.02	mg/L	0.41	1.2	0.07	-
Nitrite (as N)	0.02	mg/L	0.04	0.27	< 0.02	-
Phosphate total (as P)	0.01	mg/L	0.03	0.11	0.03	-
Phosphorus reactive (as P)	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
Sulphate (as SO4)	5	mg/L	54	32	7.2	-
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	800	570	280	-
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.3	8.8	2.1	-
Total Nitrogen (as N)*	0.2	mg/L	0.75	10.3	2.18	-
Total Organic Carbon	5	mg/L	12	10	7.9	-
Total Suspended Solids Dried at 103°C–105°C	5	mg/L	6.6	130	9.1	-
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	52	56	40	-
Carbonate Alkalinity (as CaCO3)	10	mg/L	10	< 10	< 10	-
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	< 20	-
Total Alkalinity (as CaCO3)	20	mg/L	62	56	40	-
Heavy Metals						
Arsenic	0.001	mg/L	-	-	-	N/A
Boron	0.05	mg/L	0.09	0.08	0.08	-
Cadmium	0.0002	mg/L	-	-	-	N/A
Chromium	0.001	mg/L	0.002	0.019	< 0.001	N/A
Copper	0.001	mg/L	0.003	0.011	0.003	N/A
Lead	0.001	mg/L	0.002	0.013	< 0.001	N/A
Nickel	0.001	mg/L	0.002	0.005	< 0.001	N/A
Zinc	0.005	mg/L	0.009	0.040	0.012	N/A
Alkali Metals						
Calcium	0.5	mg/L	41	32	16	-
Magnesium	0.5	mg/L	26	9.7	3.0	-
Potassium	0.5	mg/L	16	15	9.1	-
Sodium	0.5	mg/L	190	59	63	-
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	-	-	-	0.84
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	-	-	-	1.3
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	-	-	-	[N09]2.9
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	-	-	-	[N09]0.42
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	-	-	-	[N09]1.2
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	-	-	-	3.9
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	-	-	-	0.14
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	-	-	-	1.5
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	-	-	-	0.02
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	-	-	-	0.36
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	-	-	-	0.03
13C4-PFBA (surr.)	1	%	-	-	-	98
13C5-PFPeA (surr.)	1	%	-	-	-	118
13C5-PFHxA (surr.)	1	%	-	-	-	96

Client Sample ID			SW13	SW14	SWSTG1&2	LP01
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029274	M22-My0029275	M22-My0029276	M22-My0029277
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
13C4-PFHpA (surr.)	1	%	-	-	-	100
13C8-PFOA (surr.)	1	%	-	-	-	104
13C5-PFNA (surr.)	1	%	-	-	-	85
13C6-PFDA (surr.)	1	%	-	-	-	83
13C2-PFUnDA (surr.)	1	%	-	-	-	74
13C2-PFDoDA (surr.)	1	%	-	-	-	75
13C2-PFTeDA (surr.)	1	%	-	-	-	147
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	-	-	-	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	-	-	-	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	-	-	-	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	-	-	-	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	-	-	-	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	-	-	-	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	-	-	-	< 0.05
13C8-FOSA (surr.)	1	%	-	-	-	136
D3-N-MeFOSA (surr.)	1	%	-	-	-	48
D5-N-EtFOSA (surr.)	1	%	-	-	-	34
D7-N-MeFOSE (surr.)	1	%	-	-	-	129
D9-N-EtFOSE (surr.)	1	%	-	-	-	137
D5-N-EtFOSAA (surr.)	1	%	-	-	-	102
D3-N-MeFOSAA (surr.)	1	%	-	-	-	97
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	-	-	-	3.5
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	-	-	-	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	-	-	-	0.24
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	-	-	-	[N09]0.07
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	-	-	-	[N09]0.46
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	-	-	-	[N09]0.02
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	-	-	-	[N09]0.63
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	-	-	-	< 0.01
13C3-PFBS (surr.)	1	%	-	-	-	98
18O2-PFHxS (surr.)	1	%	-	-	-	92
13C8-PFOS (surr.)	1	%	-	-	-	99
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	-	-	-	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	-	-	-	0.97
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	-	-	-	0.34
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	-	-	-	< 0.01
13C2-4:2 FTSA (surr.)	1	%	-	-	-	89
13C2-6:2 FTSA (surr.)	1	%	-	-	-	58
13C2-8:2 FTSA (surr.)	1	%	-	-	-	68
13C2-10:2 FTSA (surr.)	1	%	-	-	-	76

Client Sample ID			SW13	SW14	SWSTG1&2	LP01
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029274	M22-My0029275	M22-My0029276	M22-My0029277
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	-	-	-	1.09
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	-	-	-	1.83
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	-	-	-	2.29
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	-	-	-	12.56
Sum of PFASs (n=30)*	0.1	ug/L	-	-	-	18.84
Pathogens						
E.coli (MPN)	1	MPN/100mL	-	-	-	see attached

Client Sample ID			DUP1	DUP2	GW1-3	GW1-12
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029278	M22-My0029279	M22-My0032745	M22-My0032746
Date Sampled			May 12, 2022	May 12, 2022	May 13, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	0.02	mg/L	-	-	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	-	-	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	-	-	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	-	-	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	-	-	< 0.1	< 0.1
Naphthalene[N02]	0.01	mg/L	-	-	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	-	-	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	-	-	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	-	-	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	-	-	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	-	-	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	-	-	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	-	-	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	-	-	< 0.001	< 0.001
Toluene	0.001	mg/L	-	-	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	-	-	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	-	-	< 0.002	< 0.002
o-Xylene	0.001	mg/L	-	-	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	-	-	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	-	-	107	98
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	-	-	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	-	-	< 0.001	< 0.001
Anthracene	0.001	mg/L	-	-	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	-	-	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	-	-	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	-	-	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	-	-	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	-	-	< 0.001	< 0.001
Chrysene	0.001	mg/L	-	-	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	-	-	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	-	-	< 0.001	< 0.001

Client Sample ID			DUP1	DUP2	GW1-3	GW1-12
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029278	M22-My0029279	M22-My0032745	M22-My0032746
Date Sampled			May 12, 2022	May 12, 2022	May 13, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Fluorene	0.001	mg/L	-	-	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	-	-	< 0.001	< 0.001
Naphthalene	0.001	mg/L	-	-	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	-	-	< 0.001	< 0.001
Pyrene	0.001	mg/L	-	-	< 0.001	< 0.001
Total PAH*	0.001	mg/L	-	-	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	-	-	89	73
p-Terphenyl-d14 (surr.)	1	%	-	-	81	134
Organochlorine Pesticides						
Chlordanes - Total	0.002	mg/L	-	-	< 0.002	< 0.002
4.4'-DDD	0.0002	mg/L	-	-	< 0.0002	< 0.0002
4.4'-DDE	0.0002	mg/L	-	-	< 0.0002	< 0.0002
4.4'-DDT	0.0002	mg/L	-	-	< 0.0002	< 0.0002
a-HCH	0.0002	mg/L	-	-	< 0.0002	< 0.0002
Aldrin	0.0002	mg/L	-	-	< 0.0002	< 0.0002
b-HCH	0.0002	mg/L	-	-	< 0.0002	< 0.0002
d-HCH	0.0002	mg/L	-	-	< 0.0002	< 0.0002
Dieldrin	0.0002	mg/L	-	-	< 0.0002	< 0.0002
Endosulfan I	0.0002	mg/L	-	-	< 0.0002	< 0.0002
Endosulfan II	0.0002	mg/L	-	-	< 0.0002	< 0.0002
Endosulfan sulphate	0.0002	mg/L	-	-	< 0.0002	< 0.0002
Endrin	0.0002	mg/L	-	-	< 0.0002	< 0.0002
Endrin aldehyde	0.0002	mg/L	-	-	< 0.0002	< 0.0002
Endrin ketone	0.0002	mg/L	-	-	< 0.0002	< 0.0002
g-HCH (Lindane)	0.0002	mg/L	-	-	< 0.0002	< 0.0002
Heptachlor	0.0002	mg/L	-	-	< 0.0002	< 0.0002
Heptachlor epoxide	0.0002	mg/L	-	-	< 0.0002	< 0.0002
Hexachlorobenzene	0.0002	mg/L	-	-	< 0.0002	< 0.0002
Methoxychlor	0.0002	mg/L	-	-	< 0.0002	< 0.0002
Toxaphene	0.005	mg/L	-	-	< 0.005	< 0.005
Aldrin and Dieldrin (Total)*	0.0002	mg/L	-	-	< 0.0002	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	-	-	< 0.0002	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	-	-	< 0.002	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	-	-	< 0.002	< 0.002
Dibutylchlorendate (surr.)	1	%	-	-	80	67
Tetrachloro-m-xylene (surr.)	1	%	-	-	55	105
Organophosphorus Pesticides						
Azinphos-methyl	0.002	mg/L	-	-	< 0.002	< 0.002
Bolstar	0.002	mg/L	-	-	< 0.002	< 0.002
Chlorfenvinphos	0.02	mg/L	-	-	< 0.02	< 0.02
Chlorpyrifos	0.002	mg/L	-	-	< 0.002	< 0.002
Chlorpyrifos-methyl	0.002	mg/L	-	-	< 0.002	< 0.002
Coumaphos	0.02	mg/L	-	-	< 0.02	< 0.02
Demeton-S	0.002	mg/L	-	-	< 0.002	< 0.002
Demeton-O	0.002	mg/L	-	-	< 0.002	< 0.002
Diazinon	0.002	mg/L	-	-	< 0.002	< 0.002
Dichlorvos	0.002	mg/L	-	-	< 0.002	< 0.002
Dimethoate	0.002	mg/L	-	-	< 0.002	< 0.002
Disulfoton	0.002	mg/L	-	-	< 0.002	< 0.002

Client Sample ID			DUP1	DUP2	GW1-3	GW1-12
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029278	M22-My0029279	M22-My0032745	M22-My0032746
Date Sampled			May 12, 2022	May 12, 2022	May 13, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
EPN	0.002	mg/L	-	-	< 0.002	< 0.002
Ethion	0.002	mg/L	-	-	< 0.002	< 0.002
Ethoprop	0.002	mg/L	-	-	< 0.002	< 0.002
Ethyl parathion	0.002	mg/L	-	-	< 0.002	< 0.002
Fenitrothion	0.002	mg/L	-	-	< 0.002	< 0.002
Fensulfothion	0.002	mg/L	-	-	< 0.002	< 0.002
Fenthion	0.002	mg/L	-	-	< 0.002	< 0.002
Malathion	0.002	mg/L	-	-	< 0.002	< 0.002
Merphos	0.002	mg/L	-	-	< 0.002	< 0.002
Methyl parathion	0.002	mg/L	-	-	< 0.002	< 0.002
Mevinphos	0.002	mg/L	-	-	< 0.002	< 0.002
Monocrotophos	0.002	mg/L	-	-	< 0.002	< 0.002
Naled	0.002	mg/L	-	-	< 0.002	< 0.002
Omethoate	0.02	mg/L	-	-	< 0.02	< 0.02
Phorate	0.002	mg/L	-	-	< 0.002	< 0.002
Pirimiphos-methyl	0.02	mg/L	-	-	< 0.02	< 0.02
Pyrazophos	0.002	mg/L	-	-	< 0.002	< 0.002
Ronnel	0.002	mg/L	-	-	< 0.002	< 0.002
Terbufos	0.002	mg/L	-	-	< 0.002	< 0.002
Tetrachlorvinphos	0.002	mg/L	-	-	< 0.002	< 0.002
Tokuthion	0.002	mg/L	-	-	< 0.002	< 0.002
Trichloronate	0.002	mg/L	-	-	< 0.002	< 0.002
Triphenylphosphate (surr.)	1	%	-	-	65	95
Polychlorinated Biphenyls						
Aroclor-1016	0.005	mg/L	-	-	< 0.005	< 0.005
Aroclor-1221	0.005	mg/L	-	-	< 0.005	< 0.005
Aroclor-1232	0.005	mg/L	-	-	< 0.005	< 0.005
Aroclor-1242	0.005	mg/L	-	-	< 0.005	< 0.005
Aroclor-1248	0.005	mg/L	-	-	< 0.005	< 0.005
Aroclor-1254	0.005	mg/L	-	-	< 0.005	< 0.005
Aroclor-1260	0.005	mg/L	-	-	< 0.005	< 0.005
Total PCB*	0.005	mg/L	-	-	< 0.005	< 0.005
Dibutylchlorendate (surr.)	1	%	-	-	80	67
Tetrachloro-m-xylene (surr.)	1	%	-	-	55	105
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	-	-	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	-	-	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	-	-	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	-	-	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	-	-	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	-	-	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	-	-	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	-	-	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	-	-	< 0.01	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	-	-	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	-	-	< 0.03	< 0.03
2-Nitrophenol	0.01	mg/L	-	-	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	-	-	< 0.003	< 0.003

Client Sample ID			DUP1	DUP2	GW1-3	GW1-12
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029278	M22-My0029279	M22-My0032745	M22-My0032746
Date Sampled			May 12, 2022	May 12, 2022	May 13, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2.4-Dinitrophenol	0.03	mg/L	-	-	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	-	-	< 0.003	< 0.003
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	-	-	< 0.006	< 0.006
Total cresols*	0.01	mg/L	-	-	< 0.01	< 0.01
4-Nitrophenol	0.03	mg/L	-	-	< 0.03	< 0.03
Dinoseb	0.1	mg/L	-	-	< 0.1	< 0.1
Phenol	0.003	mg/L	-	-	< 0.003	< 0.003
Phenol-d6 (surr.)	1	%	-	-	56	64
Total Non-Halogenated Phenol*	0.1	mg/L	-	-	< 0.1	< 0.1
Ammonia (as N)	0.01	mg/L	0.40	0.07	< 0.01	1.2
Chemical Oxygen Demand (COD)	25	mg/L	110	110	32	110
Chloride	1	mg/L	370	280	390	800
Nitrate & Nitrite (as N)	0.05	mg/L	0.42	0.42	0.12	0.38
Nitrate (as N)	0.02	mg/L	0.39	0.38	0.11	0.25
Nitrite (as N)	0.02	mg/L	0.03	0.04	< 0.02	0.14
Phosphate total (as P)	0.01	mg/L	0.03	0.01	0.01	0.40
Phosphorus reactive (as P)	0.01	mg/L	< 0.01	< 0.01	< 0.01	0.01
Sulphate (as SO4)	5	mg/L	69	46	37	36
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	820	680	840	2500
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	4.6	1.5	1.2	1.0
Total Nitrogen (as N)*	0.2	mg/L	5.02	1.92	1.32	1.38
Total Organic Carbon	5	mg/L	9.2	11	< 5	< 5
Total Suspended Solids Dried at 103°C–105°C	5	mg/L	6.0	6.9	< 5	22
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	59	81	< 20	< 20
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	180
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	< 20	1100
Total Alkalinity (as CaCO3)	20	mg/L	64	81	< 20	1300
Heavy Metals						
Boron	0.05	mg/L	0.09	0.10	< 0.5	< 0.5
Chromium	0.001	mg/L	0.004	< 0.001	0.005	0.007
Copper	0.001	mg/L	0.004	0.002	0.003	0.004
Lead	0.001	mg/L	0.002	< 0.001	0.005	0.002
Nickel	0.001	mg/L	0.002	0.001	0.015	0.003
Zinc	0.005	mg/L	0.010	< 0.005	0.055	0.007
Alkali Metals						
Calcium	0.5	mg/L	38	40	22	520
Magnesium	0.5	mg/L	23	20	29	< 5
Potassium	0.5	mg/L	16	21	0.5	52
Sodium	0.5	mg/L	180	140	200	280
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	-	-	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	-	-	< 0.01	< 0.01

Client Sample ID			DUP1	DUP2	GW1-3	GW1-12
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029278	M22-My0029279	M22-My0032745	M22-My0032746
Date Sampled			May 12, 2022	May 12, 2022	May 13, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	-	-	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	-	-	85	60
13C5-PFPeA (surr.)	1	%	-	-	101	59
13C5-PFHxA (surr.)	1	%	-	-	84	72
13C4-PFHpA (surr.)	1	%	-	-	85	70
13C8-PFOA (surr.)	1	%	-	-	83	74
13C5-PFNA (surr.)	1	%	-	-	73	63
13C6-PFDA (surr.)	1	%	-	-	77	51
13C2-PFUnDA (surr.)	1	%	-	-	67	28
13C2-PFDoDA (surr.)	1	%	-	-	118	15
13C2-PFTeDA (surr.)	1	%	-	-	94	32
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	-	-	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	-	-	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	-	-	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	-	-	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	-	-	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	-	-	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	-	-	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	-	-	24	13
D3-N-MeFOSA (surr.)	1	%	-	-	94	22
D5-N-EtFOSA (surr.)	1	%	-	-	14	31
D7-N-MeFOSE (surr.)	1	%	-	-	29	12
D9-N-EtFOSE (surr.)	1	%	-	-	58	43
D5-N-EtFOSAA (surr.)	1	%	-	-	82	94
D3-N-MeFOSAA (surr.)	1	%	-	-	89	72
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	-	-	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	-	-	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	-	-	90	64
18O2-PFHxS (surr.)	1	%	-	-	92	64
13C8-PFOS (surr.)	1	%	-	-	84	57

Client Sample ID			DUP1	DUP2	GW1-3	GW1-12
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0029278	M22-My0029279	M22-My0032745	M22-My0032746
Date Sampled			May 12, 2022	May 12, 2022	May 13, 2022	May 13, 2022
Test/Reference	LOR	Unit				
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	-	-	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	-	-	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	-	-	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	-	-	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	-	-	57	31
13C2-6:2 FTSA (surr.)	1	%	-	-	62	39
13C2-8:2 FTSA (surr.)	1	%	-	-	61	23
13C2-10:2 FTSA (surr.)	1	%	-	-	77	57
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	-	-	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	-	-	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	-	-	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	-	-	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	-	-	< 0.1	< 0.1

Client Sample ID			GW8-3	GW8-12	GW9-12	GW14-3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0032747	M22-My0032748	M22-My0032749	M22-My0032750
Date Sampled			May 13, 2022	May 13, 2022	May 13, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	82	109	96	92

Client Sample ID			GW8-3	GW8-12	GW9-12	GW14-3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0032747	M22-My0032748	M22-My0032749	M22-My0032750
Date Sampled			May 13, 2022	May 13, 2022	May 13, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	67	83	58	131
p-Terphenyl-d14 (surr.)	1	%	135	130	115	75
Organochlorine Pesticides						
Chlordanes - Total	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
4.4'-DDD	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
4.4'-DDE	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
4.4'-DDT	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
a-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
b-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
d-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
g-HCH (Lindane)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Heptachlor epoxide	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Hexachlorobenzene	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Toxaphene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dibutylchlorendate (surr.)	1	%	58	55	72	95
Tetrachloro-m-xylene (surr.)	1	%	138	118	106	75

Client Sample ID			GW8-3	GW8-12	GW9-12	GW14-3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0032747	M22-My0032748	M22-My0032749	M22-My0032750
Date Sampled			May 13, 2022	May 13, 2022	May 13, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Azinphos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Bolstar	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorfenvinphos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Chlorpyrifos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorpyrifos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Coumaphos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Demeton-S	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Demeton-O	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Diazinon	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dimethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Disulfoton	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
EPN	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethoprop	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Malathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Merphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Mevinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Monocrotophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Naled	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Omethoate	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phorate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Pyrazophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ronnel	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Terbufos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tokuthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Trichloronate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Triphenylphosphate (surr.)	1	%	103	89	73	100
Polychlorinated Biphenyls						
Aroclor-1016	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1221	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1232	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1242	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1248	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1254	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1260	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Total PCB*	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Dibutylchlorendate (surr.)	1	%	58	55	72	95
Tetrachloro-m-xylene (surr.)	1	%	138	118	106	75

Client Sample ID			GW8-3	GW8-12	GW9-12	GW14-3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0032747	M22-My0032748	M22-My0032749	M22-My0032750
Date Sampled			May 13, 2022	May 13, 2022	May 13, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	< 0.006
Total cresols*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Phenol-d6 (surr.)	1	%	52	53	50	39
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Ammonia (as N)	0.01	mg/L	< 0.01	0.03	< 0.01	0.03
Chemical Oxygen Demand (COD)	25	mg/L	96	540	< 25	37
Chloride	1	mg/L	3200	30000	8.9	1600
Nitrate & Nitrite (as N)	0.05	mg/L	26	3.4	0.44	0.99
Nitrate (as N)	0.02	mg/L	26	3.4	0.44	0.99
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.09	0.03	0.02	0.02
Phosphorus reactive (as P)	0.01	mg/L	0.08	0.02	0.01	< 0.01
Sulphate (as SO4)	5	mg/L	460	3700	6.1	280
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	5300	55000	1100	2900
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	4.4	3.0	< 0.2	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	30.4	6.4	0.44	0.99
Total Organic Carbon	5	mg/L	9.2	< 5	< 5	< 5
Total Suspended Solids Dried at 103°C–105°C	5	mg/L	20	80	11	26
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	58	250	< 20	< 20
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	< 20	< 20
Total Alkalinity (as CaCO3)	20	mg/L	58	250	< 20	< 20
Heavy Metals						
Boron	0.05	mg/L	0.82	2.6	< 0.5	< 0.5
Chromium	0.001	mg/L	< 0.001	< 0.001	0.001	< 0.001
Copper	0.001	mg/L	0.008	0.003	0.002	0.002
Lead	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			GW8-3	GW8-12	GW9-12	GW14-3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0032747	M22-My0032748	M22-My0032749	M22-My0032750
Date Sampled			May 13, 2022	May 13, 2022	May 13, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Heavy Metals						
Nickel	0.001	mg/L	0.007	0.021	0.001	0.029
Zinc	0.005	mg/L	0.11	0.093	0.024	0.061
Alkali Metals						
Calcium	0.5	mg/L	240	1100	1.7	88
Magnesium	0.5	mg/L	230	2300	1.2	100
Potassium	0.5	mg/L	69	440	1.2	31
Sodium	0.5	mg/L	2000	17000	14	950
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	0.11	< 0.05	< 0.05	0.26
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.04	< 0.01	< 0.01	0.57
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.05	< 0.01	< 0.01	0.40
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	[N09]0.04	< 0.01	< 0.01	[N09]0.11
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	[N09]0.23	< 0.01	< 0.01	[N09]0.20
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	0.03	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	73	65	74	65
13C5-PFPeA (surr.)	1	%	82	68	83	68
13C5-PFHxA (surr.)	1	%	79	68	73	69
13C4-PFHpA (surr.)	1	%	70	65	72	66
13C8-PFOA (surr.)	1	%	75	69	76	65
13C5-PFNA (surr.)	1	%	73	55	68	57
13C6-PFDA (surr.)	1	%	46	36	47	48
13C2-PFUnDA (surr.)	1	%	31	21	30	28
13C2-PFDoDA (surr.)	1	%	19	11	22	20
13C2-PFTeDA (surr.)	1	%	19	28	31	22
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	39	59	14	13
D3-N-MeFOSA (surr.)	1	%	88	48	50	11
D5-N-EtFOSA (surr.)	1	%	16	43	43	43
D7-N-MeFOSE (surr.)	1	%	70	78	70	70
D9-N-EtFOSE (surr.)	1	%	11	25	79	22
D5-N-EtFOSAA (surr.)	1	%	14	13	21	20
D3-N-MeFOSAA (surr.)	1	%	26	21	21	11

Client Sample ID			GW8-3	GW8-12	GW9-12	GW14-3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0032747	M22-My0032748	M22-My0032749	M22-My0032750
Date Sampled			May 13, 2022	May 13, 2022	May 13, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.05	< 0.01	< 0.01	0.33
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	0.02	< 0.01	< 0.01	0.02
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	[N09]0.02	< 0.01	< 0.01	[N09]0.02
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]0.18	< 0.01	< 0.01	[N09]0.10
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	[N09]0.02	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]0.61	< 0.01	< 0.01	[N09]0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	84	75	79	79
18O2-PFHxS (surr.)	1	%	81	53	62	64
13C8-PFOS (surr.)	1	%	66	51	63	60
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	45	25	30	30
13C2-6:2 FTSA (surr.)	1	%	37	32	38	38
13C2-8:2 FTSA (surr.)	1	%	26	22	39	34
13C2-10:2 FTSA (surr.)	1	%	12	11	12	18
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	0.79	< 0.01	< 0.01	0.11
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.84	< 0.01	< 0.01	0.21
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	1.02	< 0.01	< 0.01	0.31
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	1.31	< 0.05	< 0.05	1.98
Sum of PFASs (n=30)*	0.1	ug/L	1.4	< 0.1	< 0.1	2.02

Client Sample ID			GW14-12	WW9	GW SUMP	GW18-3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0032751	M22-My0032752	M22-My0032753	M22-My0032754
Date Sampled			May 13, 2022	May 13, 2022	May 12, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	-	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	-	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	-	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	-	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	-	< 0.1
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	-	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	-	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	-	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	-	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	-	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	-	< 0.1

Client Sample ID			GW14-12	WW9	GW SUMP	GW18-3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0032751	M22-My0032752	M22-My0032753	M22-My0032754
Date Sampled			May 13, 2022	May 13, 2022	May 12, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	-	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	-	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	-	< 0.003
4-Bromofluorobenzene (surr.)	1	%	110	112	-	112
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	-	< 0.001
2-Fluorobiphenyl (surr.)	1	%	84	110	-	105
p-Terphenyl-d14 (surr.)	1	%	130	82	-	92
Organochlorine Pesticides						
Chlordanes - Total	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
4.4'-DDD	0.0002	mg/L	< 0.0002	< 0.0002	-	< 0.0002
4.4'-DDE	0.0002	mg/L	< 0.0002	< 0.0002	-	< 0.0002
4.4'-DDT	0.0002	mg/L	< 0.0002	< 0.0002	-	< 0.0002
a-HCH	0.0002	mg/L	< 0.0002	< 0.0002	-	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002	< 0.0002	-	< 0.0002
b-HCH	0.0002	mg/L	< 0.0002	< 0.0002	-	< 0.0002
d-HCH	0.0002	mg/L	< 0.0002	< 0.0002	-	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002	< 0.0002	-	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002	< 0.0002	-	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002	< 0.0002	-	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002	< 0.0002	-	< 0.0002
Endrin	0.0002	mg/L	< 0.0002	< 0.0002	-	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002	< 0.0002	-	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002	< 0.0002	-	< 0.0002
g-HCH (Lindane)	0.0002	mg/L	< 0.0002	< 0.0002	-	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002	< 0.0002	-	< 0.0002
Heptachlor epoxide	0.0002	mg/L	< 0.0002	< 0.0002	-	< 0.0002

Client Sample ID			GW14-12	WW9	GW SUMP	GW18-3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0032751	M22-My0032752	M22-My0032753	M22-My0032754
Date Sampled			May 13, 2022	May 13, 2022	May 12, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Hexachlorobenzene	0.0002	mg/L	< 0.0002	< 0.0002	-	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002	< 0.0002	-	< 0.0002
Toxaphene	0.005	mg/L	< 0.005	< 0.005	-	< 0.005
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	-	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	-	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Dibutylchlorendate (surr.)	1	%	98	67	-	94
Tetrachloro-m-xylene (surr.)	1	%	79	91	-	106
Organophosphorus Pesticides						
Azinphos-methyl	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Bolstar	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Chlorfenvinphos	0.02	mg/L	< 0.02	< 0.02	-	< 0.02
Chlorpyrifos	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Chlorpyrifos-methyl	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Coumaphos	0.02	mg/L	< 0.02	< 0.02	-	< 0.02
Demeton-S	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Demeton-O	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Diazinon	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Dimethoate	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Disulfoton	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
EPN	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Ethion	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Ethoprop	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Fenthion	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Malathion	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Merphos	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Mevinphos	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Monocrotophos	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Naled	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Omethoate	0.02	mg/L	< 0.02	< 0.02	-	< 0.02
Phorate	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02	< 0.02	-	< 0.02
Pyrazophos	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Ronnel	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Terbufos	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Tokuthion	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Trichloronate	0.002	mg/L	< 0.002	< 0.002	-	< 0.002
Triphenylphosphate (surr.)	1	%	65	68	-	85

Client Sample ID			GW14-12	WW9	GW SUMP	GW18-3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0032751	M22-My0032752	M22-My0032753	M22-My0032754
Date Sampled			May 13, 2022	May 13, 2022	May 12, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.005	mg/L	< 0.005	< 0.005	-	< 0.005
Aroclor-1221	0.005	mg/L	< 0.005	< 0.005	-	< 0.005
Aroclor-1232	0.005	mg/L	< 0.005	< 0.005	-	< 0.005
Aroclor-1242	0.005	mg/L	< 0.005	< 0.005	-	< 0.005
Aroclor-1248	0.005	mg/L	< 0.005	< 0.005	-	< 0.005
Aroclor-1254	0.005	mg/L	< 0.005	< 0.005	-	< 0.005
Aroclor-1260	0.005	mg/L	< 0.005	< 0.005	-	< 0.005
Total PCB*	0.005	mg/L	< 0.005	< 0.005	-	< 0.005
Dibutylchlorendate (surr.)	1	%	98	67	-	94
Tetrachloro-m-xylene (surr.)	1	%	79	91	-	106
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	-	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	-	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	-	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	-	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	-	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	-	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	-	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	-	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	-	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	-	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	-	< 0.03
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	-	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	-	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	-	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	-	< 0.003
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	-	< 0.006
Total cresols*	0.01	mg/L	< 0.01	< 0.01	-	< 0.01
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	-	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	-	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	-	< 0.003
Phenol-d6 (surr.)	1	%	60	70	-	65
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	-	< 0.1
Ammonia (as N)	0.01	mg/L	0.19	< 0.01	0.81	0.01
Chemical Oxygen Demand (COD)	25	mg/L	86	< 25	230	140
Chloride	1	mg/L	5300	1300	210	460
Nitrate & Nitrite (as N)	0.05	mg/L	3.6	1.1	< 0.05	1.8
Nitrate (as N)	0.02	mg/L	3.6	1.0	< 0.02	1.8
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.04	0.03	0.91	0.12
Phosphorus reactive (as P)	0.01	mg/L	0.03	< 0.01	0.10	< 0.01
Sulphate (as SO4)	5	mg/L	550	110	6.6	77
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	16000	2400	960	1100
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	1.0	2.0	7.1	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	4.6	3.1	7.1	1.8
Total Organic Carbon	5	mg/L	< 5	5.3	68	< 5
Total Suspended Solids Dried at 103°C–105°C	5	mg/L	82	29	120	16

Client Sample ID			GW14-12	WW9	GW SUMP	GW18-3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0032751	M22-My0032752	M22-My0032753	M22-My0032754
Date Sampled			May 13, 2022	May 13, 2022	May 12, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Chromium (hexavalent)	0.005	mg/L	-	-	-	< 0.005
AOX (Adsorbable Organic Halogen)			-	-	-	see attached
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	27	< 20	230	120
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	< 20	< 20
Total Alkalinity (as CaCO3)	20	mg/L	27	< 20	230	120
Heavy Metals						
Arsenic	0.001	mg/L	-	-	-	0.010
Barium	0.02	mg/L	-	-	-	0.18
Beryllium	0.001	mg/L	-	-	-	0.004
Boron	0.05	mg/L	0.73	< 0.5	< 0.5	< 0.5
Cadmium	0.0002	mg/L	-	-	-	0.0011
Chromium	0.001	mg/L	0.085	0.004	0.006	-
Cobalt	0.001	mg/L	-	-	-	0.010
Copper	0.001	mg/L	0.003	0.030	0.014	0.019
Iron	0.05	mg/L	-	-	-	22
Lead	0.001	mg/L	< 0.001	0.009	0.015	0.043
Manganese	0.005	mg/L	-	-	-	0.090
Mercury	0.0001	mg/L	-	-	-	0.0002
Nickel	0.001	mg/L	0.059	0.037	0.006	0.038
Selenium	0.001	mg/L	-	-	-	0.005
Vanadium	0.005	mg/L	-	-	-	0.078
Zinc	0.005	mg/L	0.13	0.083	0.069	0.13
Alkali Metals						
Calcium	0.5	mg/L	270	53	61	43
Magnesium	0.5	mg/L	270	80	25	30
Potassium	0.5	mg/L	100	12	170	1.1
Sodium	0.5	mg/L	3000	590	70	340
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	-	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.02	< 0.01	-	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.01	< 0.01	-	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	-	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	-	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	-	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	-	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	-	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	-	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	-	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	-	< 0.01
13C4-PFBA (surr.)	1	%	86	73	-	81
13C5-PFPeA (surr.)	1	%	98	81	-	92
13C5-PFHxA (surr.)	1	%	90	78	-	85
13C4-PFHpA (surr.)	1	%	87	72	-	93
13C8-PFOA (surr.)	1	%	92	74	-	95
13C5-PFNA (surr.)	1	%	89	59	-	70
13C6-PFDA (surr.)	1	%	79	50	-	62

Client Sample ID			GW14-12	WW9	GW SUMP	GW18-3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0032751	M22-My0032752	M22-My0032753	M22-My0032754
Date Sampled			May 13, 2022	May 13, 2022	May 12, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
13C2-PFUnDA (surr.)	1	%	55	25	-	42
13C2-PFDoDA (surr.)	1	%	73	33	-	46
13C2-PFTeDA (surr.)	1	%	12	50	-	43
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	-	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	-	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	-	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	-	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	-	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	-	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	-	< 0.05
13C8-FOSA (surr.)	1	%	96	27	-	25
D3-N-MeFOSA (surr.)	1	%	20	68	-	19
D5-N-EtFOSA (surr.)	1	%	30	30	-	45
D7-N-MeFOSE (surr.)	1	%	95	34	-	30
D9-N-EtFOSE (surr.)	1	%	16	59	-	51
D5-N-EtFOSAA (surr.)	1	%	42	94	-	63
D3-N-MeFOSAA (surr.)	1	%	40	99	-	73
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.01	< 0.01	-	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	-	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	-	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	-	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	-	[N09]0.13
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	-	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	-	[N09]0.23
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	-	< 0.01
13C3-PFBS (surr.)	1	%	104	83	-	97
18O2-PFHxS (surr.)	1	%	73	66	-	96
13C8-PFOS (surr.)	1	%	94	58	-	77
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	-	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	-	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	-	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	-	< 0.01
13C2-4:2 FTSA (surr.)	1	%	37	31	-	66
13C2-6:2 FTSA (surr.)	1	%	50	34	-	58
13C2-8:2 FTSA (surr.)	1	%	34	25	-	54
13C2-10:2 FTSA (surr.)	1	%	56	23	-	44

Client Sample ID			GW14-12	WW9	GW SUMP	GW18-3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0032751	M22-My0032752	M22-My0032753	M22-My0032754
Date Sampled			May 13, 2022	May 13, 2022	May 12, 2022	May 13, 2022
Test/Reference	LOR	Unit				
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	-	0.36
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	-	0.23
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	-	0.36
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	-	0.36
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	-	0.36
Pathogens						
E.coli (MPN)	1	MPN/100mL	-	-	-	see attached
Thermotolerant Coliforms (MPN)	1	MPN/100mL	-	-	-	see attached
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	-	-	-	< 0.001
1.1-Dichloroethene	0.001	mg/L	-	-	-	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	-	-	-	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	-	-	-	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	-	-	-	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	-	-	-	< 0.001
1.2-Dibromoethane	0.001	mg/L	-	-	-	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	-	-	-	< 0.001
1.2-Dichloroethane	0.001	mg/L	-	-	-	< 0.001
1.2-Dichloropropane	0.001	mg/L	-	-	-	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	-	-	-	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	-	-	-	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	-	-	-	< 0.001
1.3-Dichloropropane	0.001	mg/L	-	-	-	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	-	-	-	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	-	-	-	< 0.001
2-Butanone (MEK)	0.005	mg/L	-	-	-	< 0.005
2-Propanone (Acetone)	0.005	mg/L	-	-	-	< 0.005
4-Chlorotoluene	0.001	mg/L	-	-	-	< 0.001
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	-	-	-	< 0.005
Allyl chloride	0.001	mg/L	-	-	-	< 0.001
Benzene	0.001	mg/L	-	-	-	< 0.001
Bromobenzene	0.001	mg/L	-	-	-	< 0.001
Bromochloromethane	0.001	mg/L	-	-	-	< 0.001
Bromodichloromethane	0.001	mg/L	-	-	-	< 0.001
Bromoform	0.001	mg/L	-	-	-	< 0.001
Bromomethane	0.005	mg/L	-	-	-	< 0.005
Carbon disulfide	0.001	mg/L	-	-	-	< 0.001
Carbon Tetrachloride	0.001	mg/L	-	-	-	< 0.001
Chlorobenzene	0.001	mg/L	-	-	-	< 0.001
Chloroethane	0.005	mg/L	-	-	-	< 0.005
Chloroform	0.005	mg/L	-	-	-	< 0.005
Chloromethane	0.005	mg/L	-	-	-	< 0.005
cis-1.2-Dichloroethene	0.001	mg/L	-	-	-	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	-	-	-	< 0.001
Dibromochloromethane	0.001	mg/L	-	-	-	< 0.001
Dibromomethane	0.001	mg/L	-	-	-	< 0.001
Dichlorodifluoromethane	0.005	mg/L	-	-	-	< 0.005
Ethylbenzene	0.001	mg/L	-	-	-	< 0.001
Iodomethane	0.001	mg/L	-	-	-	< 0.001

Client Sample ID			GW14-12	WW9	GW SUMP	GW18-3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0032751	M22-My0032752	M22-My0032753	M22-My0032754
Date Sampled			May 13, 2022	May 13, 2022	May 12, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Volatile Organics						
Isopropyl benzene (Cumene)	0.001	mg/L	-	-	-	< 0.001
m&p-Xylenes	0.002	mg/L	-	-	-	< 0.002
Methylene Chloride	0.005	mg/L	-	-	-	< 0.005
o-Xylene	0.001	mg/L	-	-	-	< 0.001
Styrene	0.001	mg/L	-	-	-	< 0.001
Tetrachloroethene	0.001	mg/L	-	-	-	< 0.001
Toluene	0.001	mg/L	-	-	-	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	-	-	-	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	-	-	-	< 0.001
Trichloroethene	0.001	mg/L	-	-	-	< 0.001
Trichlorofluoromethane	0.005	mg/L	-	-	-	< 0.005
Vinyl chloride	0.005	mg/L	-	-	-	< 0.005
Xylenes - Total*	0.003	mg/L	-	-	-	< 0.003
Total MAH*	0.003	mg/L	-	-	-	< 0.003
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	-	-	-	< 0.005
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	-	-	-	< 0.005
4-Bromofluorobenzene (surr.)	1	%	-	-	-	112
Toluene-d8 (surr.)	1	%	-	-	-	87
Glyphosate & AMPA						
AMPA	0.01	mg/L	-	-	-	< 1
Glyphosate	0.01	mg/L	-	-	-	< 1
Volatile Fatty Acids (VFA) by GC-MS						
Acetic Acid	5	mg/L	-	-	-	< 5
Propionic acid	5	mg/L	-	-	-	< 5
Isobutyric acid	5	mg/L	-	-	-	< 5
Butyric acid	5	mg/L	-	-	-	< 5
Isovaleric acid	5	mg/L	-	-	-	< 5
Valeric acid	5	mg/L	-	-	-	< 5
4-Methylvaleric acid	5	mg/L	-	-	-	< 5
Hexanoic acid	5	mg/L	-	-	-	< 5
Heptanoic acid	5	mg/L	-	-	-	< 5
Total VFA as Acetic Acid Equivalents	5	mg/L	-	-	-	< 5

Client Sample ID			GW18-12	GW17-12	GW17-30	GW17-3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0032755	M22-My0032756	M22-My0032757	M22-My0032758
Date Sampled			May 13, 2022	May 13, 2022	May 13, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02

Client Sample ID			GW18-12	GW17-12	GW17-30	GW17-3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0032755	M22-My0032756	M22-My0032757	M22-My0032758
Date Sampled			May 13, 2022	May 13, 2022	May 13, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	128	122	110	113
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	67	73	58	80
p-Terphenyl-d14 (surr.)	1	%	80	82	131	148
Organochlorine Pesticides						
Chlordanes - Total	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
4.4'-DDD	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
4.4'-DDE	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
4.4'-DDT	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
a-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
b-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
d-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002

Client Sample ID			GW18-12	GW17-12	GW17-30	GW17-3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0032755	M22-My0032756	M22-My0032757	M22-My0032758
Date Sampled			May 13, 2022	May 13, 2022	May 13, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
g-HCH (Lindane)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Heptachlor epoxide	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Hexachlorobenzene	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Toxaphene	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dibutylchlorendate (surr.)	1	%	81	79	95	59
Tetrachloro-m-xylene (surr.)	1	%	54	66	75	105
Organophosphorus Pesticides						
Azinphos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Bolstar	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorfenvinphos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Chlorpyrifos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorpyrifos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Coumaphos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Demeton-S	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Demeton-O	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Diazinon	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dimethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Disulfoton	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
EPN	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethoprop	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Malathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Merphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Mevinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Monocrotophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Naled	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Omethoate	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phorate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Pyrazophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ronnel	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Terbufos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tokuthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Trichloronate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Triphenylphosphate (surr.)	1	%	74	81	95	70

Client Sample ID			GW18-12	GW17-12	GW17-30	GW17-3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0032755	M22-My0032756	M22-My0032757	M22-My0032758
Date Sampled			May 13, 2022	May 13, 2022	May 13, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1221	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1232	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1242	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1248	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1254	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Aroclor-1260	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Total PCB*	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Dibutylchlorendate (surr.)	1	%	81	79	95	59
Tetrachloro-m-xylene (surr.)	1	%	54	66	75	105
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	< 0.006
Total cresols*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Phenol-d6 (surr.)	1	%	80	149	102	101
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Ammonia (as N)	0.01	mg/L	< 0.01	0.02	0.08	< 0.01
Chemical Oxygen Demand (COD)	25	mg/L	< 25	45	< 25	< 25
Chloride	1	mg/L	210	4000	1600	6300
Nitrate & Nitrite (as N)	0.05	mg/L	4.6	0.36	1.8	1.1
Nitrate (as N)	0.02	mg/L	4.6	0.35	1.7	1.1
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	0.11	< 0.02
Phosphate total (as P)	0.01	mg/L	0.08	0.03	< 0.01	0.06
Phosphorus reactive (as P)	0.01	mg/L	0.02	< 0.01	0.01	< 0.01
Sulphate (as SO4)	5	mg/L	180	380	410	480
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	2600	5400	4000	8600
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.9	0.4	1.2	0.5
Total Nitrogen (as N)*	0.2	mg/L	5.5	0.76	3	1.6
Total Organic Carbon	5	mg/L	< 5	< 5	< 5	< 5
Total Suspended Solids Dried at 103°C–105°C	5	mg/L	16	52	37	120

Client Sample ID			GW18-12	GW17-12	GW17-30	GW17-3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0032755	M22-My0032756	M22-My0032757	M22-My0032758
Date Sampled			May 13, 2022	May 13, 2022	May 13, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Chromium (hexavalent)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
AOX (Adsorbable Organic Halogen)			see attached	see attached	see attached	see attached
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	170	28	< 20	21
Carbonate Alkalinity (as CaCO3)	10	mg/L	11	< 10	77	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	150	< 20
Total Alkalinity (as CaCO3)	20	mg/L	190	28	230	21
Heavy Metals						
Arsenic	0.001	mg/L	0.002	0.001	< 0.001	0.005
Barium	0.02	mg/L	0.16	0.11	0.13	0.19
Beryllium	0.001	mg/L	< 0.001	0.002	< 0.001	< 0.001
Boron	0.05	mg/L	< 0.5	< 0.5	< 0.5	< 0.5
Cadmium	0.0002	mg/L	0.0012	0.0025	< 0.0002	0.0036
Cobalt	0.001	mg/L	< 0.001	0.010	< 0.001	0.014
Copper	0.001	mg/L	0.006	0.011	0.010	0.012
Iron	0.05	mg/L	1.1	0.68	0.07	7.1
Lead	0.001	mg/L	0.003	0.011	0.007	0.035
Manganese	0.005	mg/L	0.043	0.20	0.005	0.27
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	0.0001
Nickel	0.001	mg/L	0.004	0.12	0.003	0.11
Selenium	0.001	mg/L	0.002	0.001	< 0.001	0.002
Vanadium	0.005	mg/L	0.023	< 0.005	< 0.005	0.020
Zinc	0.005	mg/L	0.023	0.54	0.018	0.45
Alkali Metals						
Calcium	0.5	mg/L	82	360	580	670
Magnesium	0.5	mg/L	21	280	3.6	520
Potassium	0.5	mg/L	19	23	16	30
Sodium	0.5	mg/L	150	2500	1000	3900
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	80	109	108	80
13C5-PFPeA (surr.)	1	%	97	105	98	79
13C5-PFHxA (surr.)	1	%	82	86	91	80
13C4-PFHpA (surr.)	1	%	90	94	93	93
13C8-PFOA (surr.)	1	%	86	107	92	102
13C5-PFNA (surr.)	1	%	84	90	94	91
13C6-PFDA (surr.)	1	%	75	85	93	101
13C2-PFUnDA (surr.)	1	%	59	67	74	81

Client Sample ID			GW18-12	GW17-12	GW17-30	GW17-3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0032755	M22-My0032756	M22-My0032757	M22-My0032758
Date Sampled			May 13, 2022	May 13, 2022	May 13, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
13C2-PFDoDA (surr.)	1	%	51	85	145	94
13C2-PFTeDA (surr.)	1	%	55	48	92	50
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	96	62	13	11
D3-N-MeFOSA (surr.)	1	%	11	13	56	56
D5-N-EtFOSA (surr.)	1	%	15	17	22	43
D7-N-MeFOSE (surr.)	1	%	36	36	33	59
D9-N-EtFOSE (surr.)	1	%	10	28	12	15
D5-N-EtFOSAA (surr.)	1	%	67	91	103	117
D3-N-MeFOSAA (surr.)	1	%	85	133	132	155
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]0.08	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]0.09	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	91	94	102	98
18O2-PFHxS (surr.)	1	%	109	96	92	113
13C8-PFOS (surr.)	1	%	90	93	99	104
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	57	62	69	58
13C2-6:2 FTSA (surr.)	1	%	66	67	59	55
13C2-8:2 FTSA (surr.)	1	%	65	77	69	71
13C2-10:2 FTSA (surr.)	1	%	74	83	152	94

Client Sample ID			GW18-12	GW17-12	GW17-30	GW17-3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0032755	M22-My0032756	M22-My0032757	M22-My0032758
Date Sampled			May 13, 2022	May 13, 2022	May 13, 2022	May 13, 2022
Test/Reference	LOR	Unit				
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	0.17	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.09	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.17	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.17	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	0.17	< 0.1	< 0.1	< 0.1
Pathogens						
E.coli (MPN)	1	MPN/100mL	see attached	see attached	see attached	see attached
Thermotolerant Coliforms (MPN)	1	MPN/100mL	see attached	see attached	see attached	see attached
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Butanone (MEK)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
2-Propanone (Acetone)	0.005	mg/L	< 0.005	< 0.005	0.010	< 0.005
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Allyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromoform	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromomethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chloroethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Chloroform	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Chloromethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dichlorodifluoromethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Iodomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			GW18-12	GW17-12	GW17-30	GW17-3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M22-My0032755	M22-My0032756	M22-My0032757	M22-My0032758
Date Sampled			May 13, 2022	May 13, 2022	May 13, 2022	May 13, 2022
Test/Reference	LOR	Unit				
Volatile Organics						
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methylene Chloride	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Styrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Trichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Trichlorofluoromethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Vinyl chloride	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total MAH*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
4-Bromofluorobenzene (surr.)	1	%	128	122	110	113
Toluene-d8 (surr.)	1	%	88	87	85	81
Glyphosate & AMPA						
AMPA	0.01	mg/L	< 1	< 1	< 1	< 1
Glyphosate	0.01	mg/L	< 1	< 1	< 1	< 1
Volatile Fatty Acids (VFA) by GC-MS						
Acetic Acid	5	mg/L	< 5	< 5	< 5	< 5
Propionic acid	5	mg/L	< 5	< 5	< 5	< 5
Isobutyric acid	5	mg/L	< 5	< 5	< 5	< 5
Butyric acid	5	mg/L	< 5	< 5	< 5	< 5
Isovaleric acid	5	mg/L	< 5	< 5	< 5	< 5
Valeric acid	5	mg/L	< 5	< 5	< 5	< 5
4-Methylvaleric acid	5	mg/L	< 5	< 5	< 5	< 5
Hexanoic acid	5	mg/L	< 5	< 5	< 5	< 5
Heptanoic acid	5	mg/L	< 5	< 5	< 5	< 5
Total VFA as Acetic Acid Equivalents	5	mg/L	< 5	< 5	< 5	< 5

Client Sample ID			GW13-12
Sample Matrix			Water
Eurofins Sample No.			M22-My0035820
Date Sampled			May 12, 2022
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1
Naphthalene[N02]	0.01	mg/L	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02

Client Sample ID			GW13-12
Sample Matrix			Water
Eurofins Sample No.			M22-My0035820
Date Sampled			May 12, 2022
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	90
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Chrysene	0.001	mg/L	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001
Total PAH*	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	78
p-Terphenyl-d14 (surr.)	1	%	83
Organochlorine Pesticides			
Chlordanes - Total	0.002	mg/L	< 0.002
4.4'-DDD	0.0002	mg/L	< 0.0002
4.4'-DDE	0.0002	mg/L	< 0.0002
4.4'-DDT	0.0002	mg/L	< 0.0002
a-HCH	0.0002	mg/L	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002
b-HCH	0.0002	mg/L	< 0.0002
d-HCH	0.0002	mg/L	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002
Endrin	0.0002	mg/L	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002

Client Sample ID			GW13-12
Sample Matrix			Water
Eurofins Sample No.			M22-My0035820
Date Sampled			May 12, 2022
Test/Reference	LOR	Unit	
Organochlorine Pesticides			
g-HCH (Lindane)	0.0002	mg/L	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002
Heptachlor epoxide	0.0002	mg/L	< 0.0002
Hexachlorobenzene	0.0002	mg/L	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002
Toxaphene	0.005	mg/L	< 0.005
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002
Dibutylchlorendate (surr.)	1	%	83
Tetrachloro-m-xylene (surr.)	1	%	69
Organophosphorus Pesticides			
Azinphos-methyl	0.002	mg/L	< 0.002
Bolstar	0.002	mg/L	< 0.002
Chlorfenvinphos	0.02	mg/L	< 0.02
Chlorpyrifos	0.002	mg/L	< 0.002
Chlorpyrifos-methyl	0.002	mg/L	< 0.002
Coumaphos	0.02	mg/L	< 0.02
Demeton-S	0.002	mg/L	< 0.002
Demeton-O	0.002	mg/L	< 0.002
Diazinon	0.002	mg/L	< 0.002
Dichlorvos	0.002	mg/L	< 0.002
Dimethoate	0.002	mg/L	< 0.002
Disulfoton	0.002	mg/L	< 0.002
EPN	0.002	mg/L	< 0.002
Ethion	0.002	mg/L	< 0.002
Ethoprop	0.002	mg/L	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002
Fenitrothion	0.002	mg/L	< 0.002
Fensulfothion	0.002	mg/L	< 0.002
Fenthion	0.002	mg/L	< 0.002
Malathion	0.002	mg/L	< 0.002
Merphos	0.002	mg/L	< 0.002
Methyl parathion	0.002	mg/L	< 0.002
Mevinphos	0.002	mg/L	< 0.002
Monocrotophos	0.002	mg/L	< 0.002
Naled	0.002	mg/L	< 0.002
Omethoate	0.02	mg/L	< 0.02
Phorate	0.002	mg/L	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02
Pyrazophos	0.002	mg/L	< 0.002
Ronnel	0.002	mg/L	< 0.002
Terbufos	0.002	mg/L	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002
Tokuthion	0.002	mg/L	< 0.002
Trichloronate	0.002	mg/L	< 0.002
Triphenylphosphate (surr.)	1	%	97

Client Sample ID			GW13-12
Sample Matrix			Water
Eurofins Sample No.			M22-My0035820
Date Sampled			May 12, 2022
Test/Reference	LOR	Unit	
Polychlorinated Biphenyls			
Aroclor-1016	0.005	mg/L	< 0.005
Aroclor-1221	0.005	mg/L	< 0.005
Aroclor-1232	0.005	mg/L	< 0.005
Aroclor-1242	0.005	mg/L	< 0.005
Aroclor-1248	0.005	mg/L	< 0.005
Aroclor-1254	0.005	mg/L	< 0.005
Aroclor-1260	0.005	mg/L	< 0.005
Total PCB*	0.005	mg/L	< 0.005
Dibutylchlorendate (surr.)	1	%	83
Tetrachloro-m-xylene (surr.)	1	%	69
Phenols (Halogenated)			
2-Chlorophenol	0.003	mg/L	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01
Phenols (non-Halogenated)			
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03
2-Nitrophenol	0.01	mg/L	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006
Total cresols*	0.01	mg/L	< 0.01
4-Nitrophenol	0.03	mg/L	< 0.03
Dinoseb	0.1	mg/L	< 0.1
Phenol	0.003	mg/L	< 0.003
Phenol-d6 (surr.)	1	%	54
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1
Ammonia (as N)	0.01	mg/L	2.2
Chemical Oxygen Demand (COD)	25	mg/L	< 25
Chloride	1	mg/L	76
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05
Nitrate (as N)	0.02	mg/L	< 0.05
Nitrite (as N)	0.02	mg/L	< 0.05
Phosphate total (as P)	0.01	mg/L	0.02
Phosphorus reactive (as P)	0.01	mg/L	< 0.01
Sulphate (as SO4)	5	mg/L	7.3
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	260
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	2.1
Total Nitrogen (as N)*	0.2	mg/L	2.1
Total Organic Carbon	5	mg/L	< 5
Total Suspended Solids Dried at 103°C–105°C	5	mg/L	6.8

Client Sample ID			GW13-12
Sample Matrix			Water
Eurofins Sample No.			M22-My0035820
Date Sampled			May 12, 2022
Test/Reference	LOR	Unit	
Alkalinity (speciated)			
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	43
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20
Total Alkalinity (as CaCO3)	20	mg/L	43
Heavy Metals			
Boron	0.05	mg/L	0.11
Chromium	0.001	mg/L	< 0.001
Copper	0.001	mg/L	0.003
Lead	0.001	mg/L	0.002
Nickel	0.001	mg/L	0.003
Zinc	0.005	mg/L	0.083
Alkali Metals			
Calcium	0.5	mg/L	4.7
Magnesium	0.5	mg/L	1.4
Potassium	0.5	mg/L	13
Sodium	0.5	mg/L	150
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	0.07
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.08
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.09
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	[N09]0.02
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	[N09]0.06
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	92
13C5-PFPeA (surr.)	1	%	91
13C5-PFHxA (surr.)	1	%	83
13C4-PFHpA (surr.)	1	%	91
13C8-PFOA (surr.)	1	%	77
13C5-PFNA (surr.)	1	%	65
13C6-PFDA (surr.)	1	%	45
13C2-PFUnDA (surr.)	1	%	29
13C2-PFDoDA (surr.)	1	%	38
13C2-PFTeDA (surr.)	1	%	32
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05

Client Sample ID			GW13-12
Sample Matrix			Water
Eurofins Sample No.			M22-My0035820
Date Sampled			May 12, 2022
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonamido substances			
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05
13C8-FOSA (surr.)	1	%	32
D3-N-MeFOSA (surr.)	1	%	24
D5-N-EtFOSA (surr.)	1	%	19
D7-N-MeFOSE (surr.)	1	%	17
D9-N-EtFOSE (surr.)	1	%	30
D5-N-EtFOSAA (surr.)	1	%	41
D3-N-MeFOSAA (surr.)	1	%	57
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.18
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]0.06
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]0.10
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01
13C3-PFBS (surr.)	1	%	93
18O2-PFHxS (surr.)	1	%	94
13C8-PFOS (surr.)	1	%	60
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01
13C2-4:2 FTSA (surr.)	1	%	69
13C2-6:2 FTSA (surr.)	1	%	55
13C2-8:2 FTSA (surr.)	1	%	45
13C2-10:2 FTSA (surr.)	1	%	41
PFASs Summations			
Sum (PFHxS + PFOS)*	0.01	ug/L	0.16
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.16
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.22
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.66
Sum of PFASs (n=30)*	0.1	ug/L	0.66

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B4A			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	May 16, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	May 16, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	May 16, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	May 16, 2022	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Polycyclic Aromatic Hydrocarbons	Melbourne	May 16, 2022	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (Halogenated)	Melbourne	May 16, 2022	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	May 16, 2022	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Eurofins Suite B15			
Organochlorine Pesticides	Melbourne	May 16, 2022	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)			
Organophosphorus Pesticides	Melbourne	May 16, 2022	7 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8270)			
Polychlorinated Biphenyls	Melbourne	May 16, 2022	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8082)			
Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P			
Ammonia (as N)	Melbourne	May 16, 2022	28 Days
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Nitrate & Nitrite (as N)	Melbourne	May 16, 2022	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrate (as N)	Melbourne	May 16, 2022	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrite (as N)	Melbourne	May 16, 2022	2 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Phosphate total (as P)	Melbourne	May 17, 2022	28 Days
- Method: LTM-INO-4040 Phosphate by CFA			
Phosphorus reactive (as P)	Melbourne	May 16, 2022	2 Days
- Method: APHA 4500-P			
Total Kjeldahl Nitrogen (as N)	Melbourne	May 16, 2022	28 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			
Chemical Oxygen Demand (COD)	Melbourne	May 17, 2022	28 Days
- Method: LTM-INO-4220 Determination of COD in Water			
Total Organic Carbon	Melbourne	May 16, 2022	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil			
Total Suspended Solids Dried at 103°C–105°C	Melbourne	May 16, 2022	7 Days
- Method: LTM-INO-4070 Analysis of Suspended Solids in Water by Gravimetry			
Heavy Metals	Melbourne	May 16, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B11C: Na/K/Ca/Mg	Melbourne	May 16, 2022	180 Days
- Method: LTM-MET-3010 Alkali Metals by ICP-AES			
Volatile Organics	Melbourne	May 16, 2022	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices (USEPA 8260)			
Glyphosate & AMPA	Brisbane	May 16, 2022	7 Days
- Method: LTM-ORG-2090 Determination of glyphosate/AMPA in aqueous and soil samples by LC-MS			

Description	Testing Site	Extracted	Holding Time
Volatile Fatty Acids (VFA) by GC-MS	Melbourne	May 16, 2022	28 Day
- Method: LTM-ORG-2360 Determination of Volatile Fatty Acids in Water by GC-MS			
Eurofins Suite B11E: Cl/SO4/Alkalinity			
Chloride	Melbourne	May 16, 2022	28 Days
- Method: LTM-INO-4090 Chloride by Discrete Analyser			
Sulphate (as SO4)	Melbourne	May 16, 2022	28 Days
- Method: LTM-INO-4110 Sulfate by Discrete Analyser			
Alkalinity (speciated)	Melbourne	May 16, 2022	14 Days
- Method: LTM-INO-4250 Alkalinity by Electrometric Titration			
Total Dissolved Solids Dried at 180°C ± 2°C	Melbourne	May 16, 2022	28 Days
- Method: LTM-INO-4170 Total Dissolved Solids in Water			
Chromium (hexavalent)	Melbourne	May 16, 2022	28 Days
- Method: LTM-INO-4100 Hexavalent Chromium by Spectrometric detection			
Eurofins Suite B5			
Metals M7	Melbourne	May 16, 2022	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	May 16, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	May 16, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	May 16, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	May 16, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	May 16, 2022	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
179 Magowar Road
Girraween NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Cardno NT
Address: 93 Mitchell Street, Level 6
Darwin
NT 0800

Project Name: SBWMF WATER MONITORING
Project ID: CW1121900

Order No.:
Report #: 887921
Phone: 8 8942 8200
Fax:

Received: May 12, 2022 3:00 PM
Due: May 19, 2022
Priority: 5 Day
Contact Name: Julian Brown

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail	AOX (Adsorbable Organic Halogen)	Barium	Boron	Chemical Oxygen Demand (COD)	Chromium	Copper	E.coli (MPN)	Iron	Lead	Nickel	Thermotolerant Coliforms (MPN)	Total Organic Carbon	Total Suspended Solids Dried at 103°C–105°C	Vanadium	Zinc	Eurofins Suite B15	NEPM 2013 Metals : Metals M13	Volatile Organics	Glyphosate & AMPA	Eurofins Suite B5	Eurofins Suite B4A	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P	Eurofins Suite B11E: Cl/SO4/Alkalinity	Per- and Polyfluoroalkyl Substances (PFASs)	Eurofins Suite B11C: Na/K/Ca/Mg	Total Dissolved Solids Dried at 180°C ± 2°C	Volatile Fatty Acids (VFA) by GC-MS
Melbourne Laboratory - NATA # 1261 Site # 1254		X	X	X	X	X		X	X	X		X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217																											
Brisbane Laboratory - NATA # 1261 Site # 20794																			X								
Mayfield Laboratory - NATA # 1261 Site # 25079																											
Perth Laboratory - NATA # 2377 Site # 2370																											
External Laboratory	X						X				X																

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																								
1	GW2-3	May 12, 2022		Water	M22-My0029257			X	X	X	X			X	X		X	X	X					X	X	X	X	X	X	
2	GW2-12	May 12, 2022		Water	M22-My0029258			X	X	X	X			X	X		X	X	X					X	X	X	X	X	X	
3	GW3-3	May 12, 2022		Water	M22-My0029259			X	X	X	X			X	X		X	X	X					X	X	X	X	X	X	
4	GW3-12	May 12, 2022		Water	M22-My0029260			X	X	X	X			X	X		X	X	X					X	X	X	X	X	X	
5	GW10-12	May 12, 2022		Water	M22-My0029261			X	X	X	X			X	X		X	X	X					X	X	X	X	X	X	
6	GW11-12	May 12, 2022		Water	M22-			X	X	X	X			X	X		X	X	X					X	X	X	X	X	X	

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
179 Magowar Road
Girraween NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Cardno NT
Address: 93 Mitchell Street, Level 6
Darwin
NT 0800

Project Name: SBWMF WATER MONITORING
Project ID: CW1121900

Order No.:
Report #: 887921
Phone: 8 8942 8200
Fax:

Received: May 12, 2022 3:00 PM
Due: May 19, 2022
Priority: 5 Day
Contact Name: Julian Brown

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						AOX (Adsorbable Organic Halogen)	Barium	Boron	Chemical Oxygen Demand (COD)	Chromium	Copper	E.coli (MPN)	Iron	Lead	Nickel	Thermotolerant Coliforms (MPN)	Total Organic Carbon	Total Suspended Solids Dried at 103°C–105°C	Vanadium	Zinc	Eurofins Suite B15	NEPM 2013 Metals : Metals M13	Volatile Organics	Glyphosate & AMPA	Eurofins Suite B5	Eurofins Suite B4A	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P	Eurofins Suite B11E: Cl/SO4/Alkalinity	Per- and Polyfluoroalkyl Substances (PFASs)	Eurofins Suite B11C: Na/K/Ca/Mg	Total Dissolved Solids Dried at 180°C ± 2°C	Volatile Fatty Acids (VFA) by GC-MS
Melbourne Laboratory - NATA # 1261 Site # 1254							X	X	X	X	X		X	X	X		X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217																																	
Brisbane Laboratory - NATA # 1261 Site # 20794																								X									
Mayfield Laboratory - NATA # 1261 Site # 25079																																	
Perth Laboratory - NATA # 2377 Site # 2370																																	
External Laboratory						X						X				X																	
					My0029262																													
7	GW12-12	May 12, 2022		Water	M22-My0029263			X	X	X	X			X	X		X	X		X	X					X	X	X	X	X	X	
8	GW12-30	May 12, 2022		Water	M22-My0029264			X	X	X	X			X	X		X	X		X	X					X	X	X	X	X	X	
9	GW15-3	May 12, 2022		Water	M22-My0029266			X	X	X	X			X	X		X	X		X	X					X	X	X	X	X	X	
10	GW15-12	May 12, 2022		Water	M22-My0029267			X	X	X	X			X	X		X	X		X	X					X	X	X	X	X	X	
11	GW16-12	May 12, 2022		Water	M22-My0029268			X	X	X	X			X	X		X	X		X	X					X	X	X	X	X	X	
12	GW16-30	May 12, 2022		Water	M22-My0029269			X	X	X	X			X	X		X	X		X	X					X	X	X	X	X	X	

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
179 Magowar Road
Girraween NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
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Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
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Address: 93 Mitchell Street, Level 6
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NT 0800

Project Name: SBWMF WATER MONITORING
Project ID: CW1121900

Order No.:
Report #: 887921
Phone: 8 8942 8200
Fax:

Received: May 12, 2022 3:00 PM
Due: May 19, 2022
Priority: 5 Day
Contact Name: Julian Brown

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						AOX (Adsorbable Organic Halogen)	Barium	Boron	Chemical Oxygen Demand (COD)	Chromium	Copper	E.coli (MPN)	Iron	Lead	Nickel	Thermotolerant Coliforms (MPN)	Total Organic Carbon	Total Suspended Solids Dried at 103°C–105°C	Vanadium	Zinc	Eurofins Suite B15	NEPM 2013 Metals : Metals M13	Volatile Organics	Glyphosate & AMPA	Eurofins Suite B5	Eurofins Suite B4A	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P	Eurofins Suite B11E: Cl/SO4/Alkalinity	Per- and Polyfluoroalkyl Substances (PFASs)	Eurofins Suite B11C: Na/K/Ca/Mg	Total Dissolved Solids Dried at 180°C ± 2°C	Volatile Fatty Acids (VFA) by GC-MS
Melbourne Laboratory - NATA # 1261 Site # 1254							X	X	X	X	X		X	X	X		X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217																																
Brisbane Laboratory - NATA # 1261 Site # 20794																								X								
Mayfield Laboratory - NATA # 1261 Site # 25079																																
Perth Laboratory - NATA # 2377 Site # 2370																																
External Laboratory						X						X				X																
13	WW6	May 12, 2022		Water	M22-My0029270			X	X	X	X			X	X		X	X		X	X					X	X	X	X	X	X	
14	WW13	May 12, 2022		Water	M22-My0029271			X	X	X	X			X	X		X	X		X	X					X	X	X	X	X	X	
15	GWILP	May 12, 2022		Water	M22-My0029272			X	X	X	X			X	X		X	X		X							X	X		X	X	
16	SW12	May 12, 2022		Water	M22-My0029273			X	X	X	X			X	X		X	X		X							X	X		X	X	
17	SW13	May 12, 2022		Water	M22-My0029274			X	X	X	X			X	X		X	X		X							X	X		X	X	
18	SW14	May 12, 2022		Water	M22-My0029275			X	X	X	X			X	X		X	X		X							X	X		X	X	
19	SWSTG1&2	May 12, 2022		Water	M22-			X	X	X	X			X	X		X	X		X							X	X		X	X	

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Melbourne
6 Monterey Road
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Sydney
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Girraween NSW 2066
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Brisbane
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Auckland
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Project ID: CW1121900

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Phone: 8 8942 8200
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Melbourne Laboratory - NATA # 1261 Site # 1254							X	X	X	X	X		X	X	X		X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217																																
Brisbane Laboratory - NATA # 1261 Site # 20794																							X									
Mayfield Laboratory - NATA # 1261 Site # 25079																																
Perth Laboratory - NATA # 2377 Site # 2370																																
External Laboratory						X						X				X																
					My0029276																												
20	LP01	May 12, 2022		Water	M22-My0029277							X									X				X						X		
21	DUP1	May 12, 2022		Water	M22-My0029278			X	X	X	X			X	X		X	X		X							X	X		X	X	
22	DUP2	May 12, 2022		Water	M22-My0029279			X	X	X	X			X	X		X	X		X							X	X		X	X	
23	GW1-3	May 13, 2022		Water	M22-My0032745			X	X	X	X			X	X		X	X		X	X					X	X	X	X	X	X	
24	GW1-12	May 13, 2022		Water	M22-My0032746			X	X	X	X			X	X		X	X		X	X					X	X	X	X	X	X	
25	GW8-3	May 13, 2022		Water	M22-My0032747			X	X	X	X			X	X		X	X		X	X					X	X	X	X	X	X	

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Melbourne
6 Monterey Road
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Sydney
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Perth
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Auckland
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Melbourne Laboratory - NATA # 1261 Site # 1254							X	X	X	X	X		X	X	X		X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217																																
Brisbane Laboratory - NATA # 1261 Site # 20794																							X									
Mayfield Laboratory - NATA # 1261 Site # 25079																																
Perth Laboratory - NATA # 2377 Site # 2370																																
External Laboratory						X						X				X																
26	GW8-12	May 13, 2022		Water	M22-My0032748			X	X	X	X			X	X		X	X		X	X					X	X	X	X	X	X	
27	GW9-12	May 13, 2022		Water	M22-My0032749			X	X	X	X			X	X		X	X		X	X					X	X	X	X	X	X	
28	GW14-3	May 13, 2022		Water	M22-My0032750			X	X	X	X			X	X		X	X		X	X					X	X	X	X	X	X	
29	GW14-12	May 13, 2022		Water	M22-My0032751			X	X	X	X			X	X		X	X		X	X					X	X	X	X	X	X	
30	WW9	May 13, 2022		Water	M22-My0032752			X	X	X	X			X	X		X	X		X	X					X	X	X	X	X	X	
31	GW SUMP	May 12, 2022		Water	M22-My0032753			X	X	X	X			X	X		X	X		X							X	X		X	X	
32	GW18-3	May 13, 2022		Water	M22-	X	X		X			X	X			X	X	X	X		X	X	X	X		X	X	X	X	X	X	X

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

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Melbourne Laboratory - NATA # 1261 Site # 1254							X	X	X	X	X		X	X	X		X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217																																
Brisbane Laboratory - NATA # 1261 Site # 20794																							X									
Mayfield Laboratory - NATA # 1261 Site # 25079																																
Perth Laboratory - NATA # 2377 Site # 2370																																
External Laboratory						X						X				X																
					My0032754																												
33	GW18-12	May 13, 2022		Water	M22-My0032755	X	X		X			X	X			X	X	X	X		X	X	X	X		X	X	X	X	X	X	X
34	GW17-12	May 13, 2022		Water	M22-My0032756	X	X		X			X	X			X	X	X	X		X	X	X	X		X	X	X	X	X	X	X
35	GW17-30	May 13, 2022		Water	M22-My0032757	X	X		X			X	X			X	X	X	X		X	X	X	X		X	X	X	X	X	X	X
36	GW17-3	May 13, 2022		Water	M22-My0032758	X	X		X			X	X			X	X	X	X		X	X	X	X		X	X	X	X	X	X	X
37	GW13-12	May 12, 2022		Water	M22-My0035820			X	X	X	X			X	X		X	X		X	X					X	X	X	X	X	X	
Test Counts						5	5	31	36	31	31	6	5	31	31	5	36	36	5	31	29	5	5	5	1	28	36	36	29	36	36	5

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.002			0.002	Pass	
4.4'-DDD	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDE	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDT	mg/L	< 0.0002			0.0002	Pass	
a-HCH	mg/L	< 0.0002			0.0002	Pass	
Aldrin	mg/L	< 0.0002			0.0002	Pass	
b-HCH	mg/L	< 0.0002			0.0002	Pass	
d-HCH	mg/L	< 0.0002			0.0002	Pass	
Dieldrin	mg/L	< 0.0002			0.0002	Pass	
Endosulfan I	mg/L	< 0.0002			0.0002	Pass	
Endosulfan II	mg/L	< 0.0002			0.0002	Pass	
Endosulfan sulphate	mg/L	< 0.0002			0.0002	Pass	
Endrin	mg/L	< 0.0002			0.0002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin aldehyde	mg/L	< 0.0002			0.0002	Pass	
Endrin ketone	mg/L	< 0.0002			0.0002	Pass	
g-HCH (Lindane)	mg/L	< 0.0002			0.0002	Pass	
Heptachlor	mg/L	< 0.0002			0.0002	Pass	
Heptachlor epoxide	mg/L	< 0.0002			0.0002	Pass	
Hexachlorobenzene	mg/L	< 0.0002			0.0002	Pass	
Methoxychlor	mg/L	< 0.0002			0.0002	Pass	
Toxaphene	mg/L	< 0.005			0.005	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/L	< 0.002			0.002	Pass	
Bolstar	mg/L	< 0.002			0.002	Pass	
Chlorfenvinphos	mg/L	< 0.02			0.02	Pass	
Chlorpyrifos	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos-methyl	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.02			0.02	Pass	
Demeton-S	mg/L	< 0.002			0.002	Pass	
Demeton-O	mg/L	< 0.002			0.002	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Dimethoate	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
EPN	mg/L	< 0.002			0.002	Pass	
Ethion	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Ethyl parathion	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Malathion	mg/L	< 0.002			0.002	Pass	
Merphos	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Monocrotophos	mg/L	< 0.002			0.002	Pass	
Naled	mg/L	< 0.002			0.002	Pass	
Omethoate	mg/L	< 0.02			0.02	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	
Pirimiphos-methyl	mg/L	< 0.02			0.02	Pass	
Pyrazophos	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Terbufos	mg/L	< 0.002			0.002	Pass	
Tetrachlorvinphos	mg/L	< 0.002			0.002	Pass	
Tokuthion	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/L	< 0.005			0.005	Pass	
Aroclor-1221	mg/L	< 0.005			0.005	Pass	
Aroclor-1232	mg/L	< 0.005			0.005	Pass	
Aroclor-1242	mg/L	< 0.005			0.005	Pass	
Aroclor-1248	mg/L	< 0.005			0.005	Pass	
Aroclor-1254	mg/L	< 0.005			0.005	Pass	
Aroclor-1260	mg/L	< 0.005			0.005	Pass	
Total PCB*	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2.4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Tetrachlorophenols - Total	mg/L	< 0.03			0.03	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/L	< 0.1			0.1	Pass	
2-Methyl-4.6-dinitrophenol	mg/L	< 0.03			0.03	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2.4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2.4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
Dinoseb	mg/L	< 0.1			0.1	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chemical Oxygen Demand (COD)	mg/L	< 25			25	Pass	
Chloride	mg/L	< 1			1	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Phosphorus reactive (as P)	mg/L	< 0.01			0.01	Pass	
Sulphate (as SO4)	mg/L	< 5			5	Pass	
Total Dissolved Solids Dried at 180°C ± 2°C	mg/L	< 10			10	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Total Organic Carbon	mg/L	< 5			5	Pass	
Total Suspended Solids Dried at 103°C–105°C	mg/L	< 5			5	Pass	
Chromium (hexavalent)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO3)	mg/L	< 10			10	Pass	
Hydroxide Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Total Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Barium	mg/L	< 0.02			0.02	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Boron	mg/L	< 0.05			0.05	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Cobalt	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Selenium	mg/L	< 0.001			0.001	Pass	
Vanadium	mg/L	< 0.005			0.005	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.005			0.005	Pass	
2-Propanone (Acetone)	mg/L	< 0.005			0.005	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.005			0.005	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Benzene	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.005			0.005	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroethane	mg/L	< 0.005			0.005	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.005			0.005	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	mg/L	< 0.005			0.005	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
Methylene Chloride	mg/L	< 0.005			0.005	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.005			0.005	Pass	
Vinyl chloride	mg/L	< 0.005			0.005	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Glyphosate & AMPA							
AMPA	mg/L	< 0.01			0.01	Pass	
Glyphosate	mg/L	< 0.01			0.01	Pass	
Method Blank							
Volatile Fatty Acids (VFA) by GC-MS							
Acetic Acid	mg/L	< 5			5	Pass	
Propionic acid	mg/L	< 5			5	Pass	
Isobutyric acid	mg/L	< 5			5	Pass	
Butyric acid	mg/L	< 5			5	Pass	
Isovaleric acid	mg/L	< 5			5	Pass	
Valeric acid	mg/L	< 5			5	Pass	
4-Methylvaleric acid	mg/L	< 5			5	Pass	
Hexanoic acid	mg/L	< 5			5	Pass	
Heptanoic acid	mg/L	< 5			5	Pass	
Total VFA as Acetic Acid Equivalents	mg/L	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	125			70-130	Pass	
TRH C10-C14	%	89			70-130	Pass	
Naphthalene	%	96			70-130	Pass	
TRH C6-C10	%	102			70-130	Pass	
TRH >C10-C16	%	92			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	109			70-130	Pass	
Toluene	%	112			70-130	Pass	
Ethylbenzene	%	111			70-130	Pass	
m&p-Xylenes	%	102			70-130	Pass	
Xylenes - Total*	%	101			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	100			70-130	Pass	
Acenaphthylene	%	104			70-130	Pass	
Anthracene	%	100			70-130	Pass	
Benz(a)anthracene	%	80			70-130	Pass	
Benzo(a)pyrene	%	108			70-130	Pass	
Benzo(b&j)fluoranthene	%	76			70-130	Pass	
Benzo(g.h.i)perylene	%	111			70-130	Pass	
Benzo(k)fluoranthene	%	95			70-130	Pass	
Chrysene	%	82			70-130	Pass	
Dibenz(a.h)anthracene	%	129			70-130	Pass	
Fluoranthene	%	129			70-130	Pass	
Fluorene	%	129			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	100			70-130	Pass	
Naphthalene	%	94			70-130	Pass	
Phenanthrene	%	88			70-130	Pass	
Pyrene	%	120			70-130	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Organochlorine Pesticides							
Chlordanes - Total	%	87			70-130	Pass	
4.4'-DDD	%	83			70-130	Pass	
4.4'-DDE	%	83			70-130	Pass	
4.4'-DDT	%	93			70-130	Pass	
a-HCH	%	84			70-130	Pass	
Aldrin	%	77			70-130	Pass	
b-HCH	%	118			70-130	Pass	
d-HCH	%	99			70-130	Pass	
Dieldrin	%	73			70-130	Pass	
Endosulfan I	%	96			70-130	Pass	
Endosulfan II	%	84			70-130	Pass	
Endosulfan sulphate	%	83			70-130	Pass	
Endrin	%	73			70-130	Pass	
Endrin ketone	%	103			70-130	Pass	
g-HCH (Lindane)	%	92			70-130	Pass	
Heptachlor	%	80			70-130	Pass	
Heptachlor epoxide	%	77			70-130	Pass	
Hexachlorobenzene	%	76			70-130	Pass	
Methoxychlor	%	85			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	88			70-130	Pass	
Dimethoate	%	103			70-130	Pass	
Ethion	%	111			70-130	Pass	
Fenitrothion	%	104			70-130	Pass	
Methyl parathion	%	100			70-130	Pass	
Mevinphos	%	96			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	98			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	96			25-140	Pass	
2.4-Dichlorophenol	%	61			25-140	Pass	
2.4.5-Trichlorophenol	%	108			25-140	Pass	
2.4.6-Trichlorophenol	%	57			25-140	Pass	
2.6-Dichlorophenol	%	113			25-140	Pass	
4-Chloro-3-methylphenol	%	59			25-140	Pass	
Pentachlorophenol	%	77			25-140	Pass	
Tetrachlorophenols - Total	%	50			25-140	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	52			25-140	Pass	
2-Methyl-4.6-dinitrophenol	%	43			25-140	Pass	
2-Nitrophenol	%	66			25-140	Pass	
2.4-Dinitrophenol	%	84			25-140	Pass	
2-Methylphenol (o-Cresol)	%	77			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	76			25-140	Pass	
4-Nitrophenol	%	67			25-140	Pass	
Dinoseb	%	45			25-140	Pass	
Phenol	%	108			25-140	Pass	
LCS - % Recovery							
Ammonia (as N)	%	97			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chemical Oxygen Demand (COD)	%	88			70-130	Pass	
Chloride	%	126			70-130	Pass	
Nitrate & Nitrite (as N)	%	101			70-130	Pass	
Nitrate (as N)	%	101			70-130	Pass	
Nitrite (as N)	%	103			70-130	Pass	
Phosphate total (as P)	%	100			70-130	Pass	
Phosphorus reactive (as P)	%	123			70-130	Pass	
Sulphate (as SO4)	%	118			70-130	Pass	
Total Dissolved Solids Dried at 180°C ± 2°C	%	99			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	112			70-130	Pass	
Total Organic Carbon	%	110			70-130	Pass	
Chromium (hexavalent)	%	98			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Carbonate Alkalinity (as CaCO3)	%	94			70-130	Pass	
Total Alkalinity (as CaCO3)	%	97			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	95			80-120	Pass	
Barium	%	100			80-120	Pass	
Beryllium	%	100			80-120	Pass	
Boron	%	98			80-120	Pass	
Cadmium	%	99			80-120	Pass	
Chromium	%	95			80-120	Pass	
Cobalt	%	97			80-120	Pass	
Copper	%	95			80-120	Pass	
Iron	%	97			80-120	Pass	
Lead	%	96			80-120	Pass	
Manganese	%	99			80-120	Pass	
Mercury	%	90			80-120	Pass	
Nickel	%	97			80-120	Pass	
Selenium	%	93			80-120	Pass	
Vanadium	%	96			80-120	Pass	
Zinc	%	99			80-120	Pass	
LCS - % Recovery							
Alkali Metals							
Calcium	%	104			80-120	Pass	
Magnesium	%	99			80-120	Pass	
Potassium	%	94			80-120	Pass	
Sodium	%	96			80-120	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	105			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	124			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	88			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	112			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	115			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	108			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	123			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	107			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	120			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	72			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	111			50-150	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	105			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	54			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	124			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	94			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	117			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	144			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	91			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	104			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	108			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	119			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	106			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	92			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	139			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	146			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	54			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	115			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	134			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	125			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	93			50-150	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	120			70-130	Pass	
1.1.1-Trichloroethane	%	78			70-130	Pass	
1.2-Dichlorobenzene	%	122			70-130	Pass	
1.2-Dichloroethane	%	107			70-130	Pass	
Benzene	%	103			70-130	Pass	
Ethylbenzene	%	107			70-130	Pass	
m&p-Xylenes	%	91			70-130	Pass	
Toluene	%	107			70-130	Pass	
Trichloroethene	%	81			70-130	Pass	
Xylenes - Total*	%	90			70-130	Pass	
LCS - % Recovery							
Glyphosate & AMPA							
AMPA	%	108			70-130	Pass	
Glyphosate	%	89			70-130	Pass	
LCS - % Recovery							
Volatile Fatty Acids (VFA) by GC-MS							
Acetic Acid	%	107			70-130	Pass	
Propionic acid	%	100			70-130	Pass	
Isobutyric acid	%	90			70-130	Pass	
Butyric acid	%	104			70-130	Pass	
Isovaleric acid	%	97			70-130	Pass	
Valeric acid	%	97			70-130	Pass	
4-Methylvaleric acid	%	89			70-130	Pass	
Hexanoic acid	%	99			70-130	Pass	
Heptanoic acid	%	89			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	M22-My0037686	NCP	%	79			70-130	Pass	
TRH >C10-C16	M22-My0037686	NCP	%	83			70-130	Pass	
Spike - % Recovery									
				Result 1					
Phosphate total (as P)	B22-My0026570	NCP	%	94			70-130	Pass	
Total Organic Carbon	M22-Ma53781	NCP	%	77			70-130	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M22-My0038913	NCP	%	112			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M22-My0038913	NCP	%	120			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M22-My0038913	NCP	%	103			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M22-My0038913	NCP	%	143			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M22-My0038913	NCP	%	139			50-150	Pass	
Perfluorononanoic acid (PFNA)	M22-My0038913	NCP	%	125			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M22-My0038913	NCP	%	132			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M22-My0038913	NCP	%	126			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M22-My0038913	NCP	%	148			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M22-My0038913	NCP	%	102			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M22-My0038913	NCP	%	132			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M22-My0038913	NCP	%	85			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M22-My0038913	NCP	%	110			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M22-My0038913	NCP	%	97			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M22-My0038913	NCP	%	92			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M22-My0038913	NCP	%	97			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M22-My0038913	NCP	%	97			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M22-My0038913	NCP	%	112			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M22-My0038913	NCP	%	99			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M22-My0038913	NCP	%	99			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M22-My0038913	NCP	%	106			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M22-My0038913	NCP	%	63			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M22-My0038913	NCP	%	147			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M22-My0038913	NCP	%	126			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M22-My0038913	NCP	%	103			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M22-My0038913	NCP	%	94			50-150	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	M22-My0029258	CP	%	126			70-130	Pass	
Naphthalene	M22-My0029258	CP	%	90			70-130	Pass	
TRH C6-C10	M22-My0029258	CP	%	105			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M22-My0029258	CP	%	98			70-130	Pass	
Toluene	M22-My0029258	CP	%	106			70-130	Pass	
Ethylbenzene	M22-My0029258	CP	%	109			70-130	Pass	
m&p-Xylenes	M22-My0029258	CP	%	99			70-130	Pass	
o-Xylene	M22-My0029258	CP	%	97			70-130	Pass	
Xylenes - Total*	M22-My0029258	CP	%	99			70-130	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	M22-My0029258	CP	%	99			70-130	Pass	
Nitrate & Nitrite (as N)	M22-My0029258	CP	%	97			70-130	Pass	
Nitrate (as N)	M22-My0029258	CP	%	97			70-130	Pass	
Nitrite (as N)	M22-My0029258	CP	%	102			70-130	Pass	
Spike - % Recovery									
				Result 1					
Chemical Oxygen Demand (COD)	M22-My0029261	CP	%	100			70-130	Pass	
Spike - % Recovery									
				Result 1					
Total Kjeldahl Nitrogen (as N)	M22-My0037673	NCP	%	127			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	M22-My0029267	CP	%	107			70-130	Pass	
Naphthalene	M22-My0029267	CP	%	79			70-130	Pass	
TRH C6-C10	M22-My0029267	CP	%	117			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M22-My0029267	CP	%	114			70-130	Pass	
Toluene	M22-My0029267	CP	%	120			70-130	Pass	
Ethylbenzene	M22-My0029267	CP	%	127			70-130	Pass	
m&p-Xylenes	M22-My0029267	CP	%	114			70-130	Pass	
o-Xylene	M22-My0029267	CP	%	110			70-130	Pass	
Xylenes - Total*	M22-My0029267	CP	%	113			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M22-My0029267	CP	%	96			75-125	Pass	
Barium	M22-My0029267	CP	%	92			75-125	Pass	
Beryllium	M22-My0029267	CP	%	102			75-125	Pass	
Boron	M22-My0029267	CP	%	111			75-125	Pass	
Cadmium	M22-My0029267	CP	%	97			75-125	Pass	
Chromium	M22-My0029267	CP	%	96			75-125	Pass	
Cobalt	M22-My0029267	CP	%	95			75-125	Pass	
Copper	M22-My0029267	CP	%	93			75-125	Pass	
Iron	M22-My0029267	CP	%	95			75-125	Pass	
Lead	M22-My0029267	CP	%	93			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Manganese	M22-My0029267	CP	%	70			75-125	Fail	Q08
Mercury	M22-My0029267	CP	%	88			75-125	Pass	
Nickel	M22-My0029267	CP	%	92			75-125	Pass	
Selenium	M22-My0029267	CP	%	95			75-125	Pass	
Vanadium	M22-My0029267	CP	%	99			75-125	Pass	
Zinc	M22-My0029267	CP	%	94			75-125	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Sodium	M22-My0029269	CP	%	92			75-125	Pass	
Spike - % Recovery									
				Result 1					
Chemical Oxygen Demand (COD)	M22-My0029273	CP	%	80			70-130	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	M22-My0032745	CP	%	94			75-125	Pass	
Magnesium	M22-My0032745	CP	%	96			75-125	Pass	
Potassium	M22-My0032745	CP	%	96			75-125	Pass	
Sodium	M22-My0032745	CP	%	97			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	M22-My0032747	CP	%	110			70-130	Pass	
Naphthalene	M22-My0032747	CP	%	89			70-130	Pass	
TRH C6-C10	M22-My0032747	CP	%	118			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M22-My0032747	CP	%	117			70-130	Pass	
Toluene	M22-My0032747	CP	%	123			70-130	Pass	
Ethylbenzene	M22-My0032747	CP	%	124			70-130	Pass	
m&p-Xylenes	M22-My0032747	CP	%	116			70-130	Pass	
o-Xylene	M22-My0032747	CP	%	114			70-130	Pass	
Xylenes - Total*	M22-My0032747	CP	%	115			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M22-My0032753	CP	%	88			75-125	Pass	
Beryllium	M22-My0032753	CP	%	93			75-125	Pass	
Cadmium	M22-My0032753	CP	%	87			75-125	Pass	
Chromium	M22-My0032753	CP	%	87			75-125	Pass	
Cobalt	M22-My0032753	CP	%	87			75-125	Pass	
Copper	M22-My0032753	CP	%	86			75-125	Pass	
Lead	M22-My0032753	CP	%	96			75-125	Pass	
Mercury	M22-My0032753	CP	%	88			75-125	Pass	
Nickel	M22-My0032753	CP	%	87			75-125	Pass	
Selenium	M22-My0032753	CP	%	90			75-125	Pass	
Vanadium	M22-My0032753	CP	%	88			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Barium	M22-My0037675	NCP	%	103			75-125	Pass	
Beryllium	M22-My0037675	NCP	%	116			75-125	Pass	
Cobalt	M22-My0037675	NCP	%	103			75-125	Pass	
Iron	M22-My0037675	NCP	%	106			75-125	Pass	
Manganese	M22-My0037675	NCP	%	104			75-125	Pass	
Mercury	M22-My0037675	NCP	%	111			75-125	Pass	
Selenium	M22-My0037675	NCP	%	107			75-125	Pass	
Vanadium	M22-My0037675	NCP	%	105			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Glyphosate & AMPA				Result 1					
AMPA	M22-My0023873	NCP	%	121			70-130	Pass	
Glyphosate	M22-My0023873	NCP	%	91			70-130	Pass	
Spike - % Recovery									
Volatile Fatty Acids (VFA) by GC-MS				Result 1					
Isobutyric acid	M22-My0040289	NCP	%	77			70-130	Pass	
Isovaleric acid	M22-My0040289	NCP	%	76			70-130	Pass	
Valeric acid	M22-My0040289	NCP	%	74			70-130	Pass	
4-Methylvaleric acid	M22-My0040289	NCP	%	79			70-130	Pass	
Hexanoic acid	M22-My0040289	NCP	%	73			70-130	Pass	
Heptanoic acid	M22-My0040289	NCP	%	76			70-130	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	M22-My0032755	CP	%	107			75-125	Pass	
Magnesium	M22-My0032755	CP	%	107			75-125	Pass	
Potassium	M22-My0032755	CP	%	107			75-125	Pass	
Sodium	M22-My0032755	CP	%	104			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	M22-My0029257	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Naphthalene	M22-My0029257	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	M22-My0029257	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M22-My0029257	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	M22-My0029257	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	M22-My0029257	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	M22-My0029257	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	M22-My0029257	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	M22-My0029257	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Benzo(a)pyrene	B22-My0037160	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2.6-Dichlorophenol	B22-My0045651	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M22-My0041031	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M22-My0041031	NCP	ug/L	1.1	1.3	13	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M22-My0041031	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M22-My0041031	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M22-My0041031	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M22-My0041031	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M22-My0041031	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M22-My0041031	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M22-My0041031	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M22-My0041031	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M22-My0041031	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M22-My0041031	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M22-My0041031	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M22-My0041031	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M22-My0041031	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M22-My0041031	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M22-My0041031	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M22-My0041031	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M22-My0041031	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M22-My0041031	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M22-My0041031	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M22-My0041031	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M22-My0041031	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M22-My0041031	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M22-My0041031	NCP	ug/L	0.14	0.15	2.0	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M22-My0041031	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M22-My0041031	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M22-My0041031	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M22-My0041031	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M22-My0041031	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Nitrate & Nitrite (as N)	M22-My0029258	CP	mg/L	2.4	2.3	<1	30%	Pass	
Nitrate (as N)	M22-My0029258	CP	mg/L	2.3	2.3	<1	30%	Pass	
Nitrite (as N)	M22-My0029258	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Phosphate total (as P)	M22-My0029258	CP	mg/L	0.44	0.44	1.0	30%	Pass	
Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Bicarbonate Alkalinity (as CaCO3)	M22-My0037673	NCP	mg/L	< 20	< 20	<1	30%	Pass	
Carbonate Alkalinity (as CaCO3)	M22-My0037673	NCP	mg/L	< 10	< 10	<1	30%	Pass	
Hydroxide Alkalinity (as CaCO3)	M22-My0037673	NCP	mg/L	< 20	< 20	<1	30%	Pass	
Total Alkalinity (as CaCO3)	M22-My0037673	NCP	mg/L	< 20	< 20	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Total Dissolved Solids Dried at 180°C ± 2°C	M22-My0029262	CP	mg/L	390	480	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C10-C14	M22-My0029263	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M22-My0029263	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M22-My0029263	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C10-C16	M22-My0029263	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	M22-My0029263	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	M22-My0029263	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M22-My0029263	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	M22-My0029263	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	M22-My0029263	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	M22-My0029263	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	M22-My0029263	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	M22-My0029263	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	M22-My0029263	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	M22-My0029263	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	M22-My0029263	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	M22-My0029263	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	M22-My0029263	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M22-My0029263	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	M22-My0029263	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	M22-My0029263	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	M22-My0029263	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
4.4'-DDD	M22-My0029263	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
4.4'-DDE	M22-My0029263	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
4.4'-DDT	M22-My0029263	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
a-HCH	M22-My0029263	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Aldrin	M22-My0029263	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
b-HCH	M22-My0029263	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
d-HCH	M22-My0029263	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Dieldrin	M22-My0029263	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan I	M22-My0029263	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan II	M22-My0029263	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan sulphate	M22-My0029263	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin	M22-My0029263	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin aldehyde	M22-My0029263	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin ketone	M22-My0029263	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
g-HCH (Lindane)	M22-My0029263	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Heptachlor	M22-My0029263	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Hexachlorobenzene	M22-My0029263	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Methoxychlor	M22-My0029263	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Toxaphene	M22-My0029263	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Bolstar	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorfenvinphos	M22-My0029263	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Chlorpyrifos	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorpyrifos-methyl	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Coumaphos	M22-My0029263	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Demeton-S	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Demeton-O	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Diazinon	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dichlorvos	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dimethoate	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Disulfoton	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
EPN	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethion	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethoprop	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethyl parathion	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenitrothion	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fensulfothion	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenthion	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Malathion	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Merphos	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methyl parathion	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Mevinphos	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Monocrotophos	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Naled	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Omethoate	M22-My0029263	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Phorate	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Pirimiphos-methyl	M22-My0029263	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Pyrazophos	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ronnel	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Terbufos	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tetrachlorvinphos	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tokuthion	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Trichloronate	M22-My0029263	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	M22-My0029263	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aroclor-1221	M22-My0029263	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aroclor-1232	M22-My0029263	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aroclor-1242	M22-My0029263	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aroclor-1248	M22-My0029263	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aroclor-1254	M22-My0029263	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aroclor-1260	M22-My0029263	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Total PCB*	M22-My0029263	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	M22-My0029263	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dichlorophenol	M22-My0029263	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4.5-Trichlorophenol	M22-My0029263	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4.6-Trichlorophenol	M22-My0029263	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
4-Chloro-3-methylphenol	M22-My0029263	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Pentachlorophenol	M22-My0029263	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Tetrachlorophenols - Total	M22-My0029263	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	M22-My0029263	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	M22-My0029263	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
2-Nitrophenol	M22-My0029263	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4-Dimethylphenol	M22-My0029263	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dinitrophenol	M22-My0029263	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
2-Methylphenol (o-Cresol)	M22-My0029263	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	

Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
3&4-Methylphenol (m&p-Cresol)	M22-My0029263	CP	mg/L	< 0.006	< 0.006	<1	30%	Pass	
4-Nitrophenol	M22-My0029263	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
Dinoseb	M22-My0029263	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Phenol	M22-My0029263	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	M22-My0029266	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Naphthalene	M22-My0029266	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	M22-My0029266	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M22-My0029266	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	M22-My0029266	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	M22-My0029266	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	M22-My0029266	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	M22-My0029266	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	M22-My0029266	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	M22-My0029266	CP	mg/L	110	110	1.0	30%	Pass	
Sulphate (as SO4)	M22-My0029266	CP	mg/L	19	17	9.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	M22-My0029267	CP	mg/L	820	820	1.0	30%	Pass	
Sulphate (as SO4)	M22-My0029267	CP	mg/L	110	110	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M22-My0029267	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium	M22-My0029267	CP	mg/L	0.06	0.06	2.0	30%	Pass	
Beryllium	M22-My0029267	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Boron	M22-My0029267	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Cadmium	M22-My0029267	CP	mg/L	0.0004	0.0004	5.0	30%	Pass	
Chromium	M22-My0029267	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	M22-My0029267	CP	mg/L	0.005	0.005	<1	30%	Pass	
Copper	M22-My0029267	CP	mg/L	0.007	0.006	6.0	30%	Pass	
Iron	M22-My0029267	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead	M22-My0029267	CP	mg/L	0.001	0.001	1.0	30%	Pass	
Manganese	M22-My0029267	CP	mg/L	0.26	0.26	1.0	30%	Pass	
Mercury	M22-My0029267	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	M22-My0029267	CP	mg/L	0.011	0.011	2.0	30%	Pass	
Selenium	M22-My0029267	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Vanadium	M22-My0029267	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Zinc	M22-My0029267	CP	mg/L	0.030	0.031	5.0	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Sodium	M22-My0029269	CP	mg/L	28	27	3.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Total Organic Carbon	M22-My0029271	CP	mg/L	< 5	< 5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Total Dissolved Solids Dried at 180°C ± 2°C	M22-My0029274	CP	mg/L	800	800	<1	30%	Pass	
Total Kjeldahl Nitrogen (as N)	M22-My0029274	CP	mg/L	0.3	0.4	18	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Heptachlor epoxide	M22-My0042432	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	M22-My0029277	CP	mg/L	1500	1500	<1	30%	Pass	
Total Kjeldahl Nitrogen (as N)	M22-My0029277	CP	mg/L	120	100	11	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	M22-My0029278	CP	mg/L	370	360	<1	30%	Pass	
Sulphate (as SO4)	M22-My0029278	CP	mg/L	69	50	32	30%	Fail	Q15
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	M22-My0032745	CP	mg/L	22	20	10	30%	Pass	
Magnesium	M22-My0032745	CP	mg/L	29	27	7.0	30%	Pass	
Sodium	M22-My0032745	CP	mg/L	200	200	2.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	M22-My0032746	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Naphthalene	M22-My0032746	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	M22-My0032746	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M22-My0032746	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	M22-My0032746	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	M22-My0032746	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	M22-My0032746	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	M22-My0032746	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	M22-My0032746	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chemical Oxygen Demand (COD)	M22-My0032746	CP	mg/L	110	98	7.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chemical Oxygen Demand (COD)	M22-My0032750	CP	mg/L	37	25	39	30%	Fail	Q15
Duplicate									
				Result 1	Result 2	RPD			
Total Dissolved Solids Dried at 180°C ± 2°C	M22-My0032752	CP	mg/L	2400	2500	1.3	30%	Pass	
Total Suspended Solids Dried at 103°C–105°C	M22-My0032752	CP	mg/L	29	28	4.3	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M22-My0032753	CP	mg/L	0.017	0.017	1.0	30%	Pass	
Barium	M22-My0032753	CP	mg/L	0.12	0.12	3.0	30%	Pass	
Beryllium	M22-My0032753	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Boron	M22-My0032753	CP	mg/L	< 0.5	< 0.5	<1	30%	Pass	
Chromium	M22-My0032753	CP	mg/L	0.006	0.006	5.0	30%	Pass	
Cobalt	M22-My0032753	CP	mg/L	0.002	0.002	3.0	30%	Pass	
Copper	M22-My0032753	CP	mg/L	0.014	0.014	3.0	30%	Pass	
Iron	M22-My0032753	CP	mg/L	18	19	1.0	30%	Pass	
Lead	M22-My0032753	CP	mg/L	0.015	0.015	3.0	30%	Pass	
Manganese	M22-My0032753	CP	mg/L	0.28	0.28	1.0	30%	Pass	
Mercury	M22-My0032753	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	M22-My0032753	CP	mg/L	0.006	0.006	3.0	30%	Pass	
Selenium	M22-My0032753	CP	mg/L	0.003	0.003	20	30%	Pass	
Vanadium	M22-My0032753	CP	mg/L	0.056	0.057	1.0	30%	Pass	
Zinc	M22-My0032753	CP	mg/L	0.069	0.072	5.0	30%	Pass	

Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	M22-My0037673	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Barium	M22-My0037675	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Beryllium	M22-My0037675	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	M22-My0037675	NCP	mg/L	0.001	0.001	<1	30%	Pass	
Iron	M22-My0037675	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Manganese	M22-My0037675	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	M22-My0037675	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Selenium	M22-My0037675	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Vanadium	M22-My0037675	NCP	mg/L	0.026	0.026	<1	30%	Pass	
Duplicate									
Glyphosate & AMPA				Result 1	Result 2	RPD			
AMPA	M22-My0032754	CP	mg/L	< 1	< 1	<1	30%	Pass	
Glyphosate	M22-My0032754	CP	mg/L	< 1	< 1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	M22-My0032755	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Naphthalene	M22-My0032755	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	M22-My0032755	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	M22-My0032755	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	M22-My0032755	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	M22-My0032755	CP	mg/L	82	85	3.0	30%	Pass	
Magnesium	M22-My0032755	CP	mg/L	21	20	2.0	30%	Pass	
Potassium	M22-My0032755	CP	mg/L	19	19	1.0	30%	Pass	
Sodium	M22-My0032755	CP	mg/L	150	150	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1-Dichloroethene	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1-Trichloroethane	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2-Trichloroethane	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dibromoethane	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichlorobenzene	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloroethane	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloropropane	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.3-Trichloropropane	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.4-Trimethylbenzene	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichlorobenzene	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichloropropane	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3.5-Trimethylbenzene	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.4-Dichlorobenzene	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Butanone (MEK)	M22-My0032755	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Propanone (Acetone)	M22-My0032755	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
4-Chlorotoluene	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	M22-My0032755	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Allyl chloride	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromobenzene	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromochloromethane	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromodichloromethane	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromoform	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromomethane	M22-My0032755	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Carbon disulfide	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Carbon Tetrachloride	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chlorobenzene	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chloroethane	M22-My0032755	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloroform	M22-My0032755	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloromethane	M22-My0032755	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
cis-1.2-Dichloroethene	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
cis-1.3-Dichloropropene	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromochloromethane	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromomethane	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dichlorodifluoromethane	M22-My0032755	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Iodomethane	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Isopropyl benzene (Cumene)	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Methylene Chloride	M22-My0032755	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Styrene	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Tetrachloroethene	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.2-Dichloroethene	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.3-Dichloropropene	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichloroethene	M22-My0032755	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichlorofluoromethane	M22-My0032755	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Vinyl chloride	M22-My0032755	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Volatile Fatty Acids (VFA) by GC-MS				Result 1	Result 2	RPD			
Acetic Acid	M22-My0032755	CP	mg/L	< 5	< 5	<1	30%	Pass	
Propionic acid	M22-My0032755	CP	mg/L	< 5	< 5	<1	30%	Pass	
Isobutyric acid	M22-My0032755	CP	mg/L	< 5	< 5	<1	30%	Pass	
Butyric acid	M22-My0032755	CP	mg/L	< 5	< 5	<1	30%	Pass	
Isovaleric acid	M22-My0032755	CP	mg/L	< 5	< 5	<1	30%	Pass	
Valeric acid	M22-My0032755	CP	mg/L	< 5	< 5	<1	30%	Pass	
4-Methylvaleric acid	M22-My0032755	CP	mg/L	< 5	< 5	<1	30%	Pass	
Hexanoic acid	M22-My0032755	CP	mg/L	< 5	< 5	<1	30%	Pass	
Heptanoic acid	M22-My0032755	CP	mg/L	< 5	< 5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	M22-My0032756	CP	mg/L	4000	4100	2.0	30%	Pass	
Sulphate (as SO4)	M22-My0032756	CP	mg/L	380	380	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chemical Oxygen Demand (COD)	M22-My0032757	CP	mg/L	< 25	< 25	<1	30%	Pass	

Comments

Analysis of Ecoli and TC has been completed by Eurofins Food Testing, NATA Accreditation Number 20293, report reference AR-22-NV-006204-01.

Analysis of AOX has been completed by Eurofins Umwelt West GmbH, report reference AR-777-2022-007159-01

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Michael Morrison	Analytical Services Manager
Caitlin Breeze	Senior Analyst-Inorganic
Edward Lee	Senior Analyst-Organic
Emily Rosenberg	Senior Analyst-Metal
Harry Bacalis	Senior Analyst-Volatile
Jonathon Angell	Senior Analyst-Organic
Joseph Edouard	Senior Analyst-Organic
Joseph Edouard	Senior Analyst-PFAS
Joseph Edouard	Senior Analyst-Volatile
Mary Makarios	Senior Analyst-Metal
Scott Beddoes	Senior Analyst-Inorganic
Scott Beddoes	Senior Analyst-Metal
Vivian Wang	Senior Analyst-Volatile

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

Cardno NT
93 Mitchell Street, Level 6
Darwin
NT 0800

Attention: **Julian Brown**

Report **864985-A**
Project name CW1121900 (SBWMF WATER MONITORING)
Received Date Feb 16, 2022

Client Sample ID			**DS04**	**DS02**	**DS03**
Sample Matrix			**Dust Deposition**	**Dust Deposition**	**Dust Deposition**
Eurofins Sample No.			**M22-Fe40907**	**M22-Fe40908**	**M22-Fe40909**
Date Sampled			**Feb 15, 2022**	**Feb 15, 2022**	**Feb 15, 2022**
Test/Reference	LOR	Unit			
Heavy Metals					
Aluminium	5.0	Total ug	< 5	< 5	< 5
Boron	1.0	Total ug	< 1	< 1	< 1
Chromium	1.0	Total ug	< 1	< 1	< 1
Cobalt	1.0	Total ug	< 1	< 1	< 1
Copper	1.0	Total ug	1.8	40	2.1
Lead	0.01	Total ug	< 0.01	< 0.01	< 0.01
Lithium	10	Total ug	< 10	< 10	< 10
Mercury	0.001	Total ug	< 0.001	< 0.001	< 0.001
Nickel	0.01	Total ug	< 0.01	< 0.01	< 0.01
Zinc	1	Total ug	< 1	< 1	< 1
Perfluoroalkyl carboxylic acids (PFCAs)					
Perfluorobutanoic acid (PFBA)[N11]	20	Total ng	< 20	< 20	< 20
Perfluoropentanoic acid (PFPeA)[N11]	20	Total ng	< 20	< 20	< 20
Perfluorohexanoic acid (PFHxA)[N11]	20	Total ng	< 20	< 20	< 20
Perfluoroheptanoic acid (PFHpA)[N11]	20	Total ng	< 20	< 20	< 20
Perfluorooctanoic acid (PFOA)[N11]	20	Total ng	< 20	< 20	< 20
Perfluorononanoic acid (PFNA)[N11]	20	Total ng	< 20	< 20	< 20
Perfluorodecanoic acid (PFDA)[N11]	20	Total ng	< 20	< 20	< 20
Perfluoroundecanoic acid (PFUnDA)[N11]	20	Total ng	< 20	< 20	< 20
Perfluorododecanoic acid (PFDoDA)[N11]	20	Total ng	< 20	< 20	< 20
Perfluorotridecanoic acid (PFTrDA)[N15]	20	Total ng	< 20	< 20	< 20
Perfluorotetradecanoic acid (PFTeDA)[N11]	20	Total ng	< 20	< 20	< 20
13C4-PFBA (surr.)	1	%	85	74	83
13C5-PFPeA (surr.)	1	%	70	59	68
13C5-PFHxA (surr.)	1	%	61	55	60
13C4-PFHpA (surr.)	1	%	58	51	58
13C8-PFOA (surr.)	1	%	79	68	74
13C5-PFNA (surr.)	1	%	61	57	54
13C6-PFDA (surr.)	1	%	53	32	55
13C2-PFUnDA (surr.)	1	%	52	17	40
13C2-PFDoDA (surr.)	1	%	33	12	26
13C2-PFTeDA (surr.)	1	%	22	12	16

Client Sample ID			DS04	DS02	DS03
Sample Matrix			Dust Deposition	Dust Deposition	Dust Deposition
Eurofins Sample No.			M22-Fe40907	M22-Fe40908	M22-Fe40909
Date Sampled			Feb 15, 2022	Feb 15, 2022	Feb 15, 2022
Test/Reference	LOR	Unit			
Perfluoroalkyl sulfonamido substances					
Perfluorooctane sulfonamide (FOSA)[N11]	20	Total ng	< 20	< 20	< 20
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	20	Total ng	< 20	< 20	< 20
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	20	Total ng	< 20	< 20	< 20
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	20	Total ng	< 20	< 20	< 20
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	20	Total ng	< 20	< 20	< 20
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	20	Total ng	< 20	< 20	< 20
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	20	Total ng	< 20	< 20	< 20
13C8-FOSA (surr.)	1	%	41	20	27
D3-N-MeFOSA (surr.)	1	%	14	12	17
D5-N-EtFOSA (surr.)	1	%	13	10	16
D7-N-MeFOSE (surr.)	1	%	32	17	18
D9-N-EtFOSE (surr.)	1	%	27	11	14
D5-N-EtFOSAA (surr.)	1	%	29	13	22
D3-N-MeFOSAA (surr.)	1	%	31	16	27
Perfluoroalkyl sulfonic acids (PFSAs)					
Perfluorobutanesulfonic acid (PFBS)[N11]	20	Total ng	< 20	< 20	< 20
Perfluorononanesulfonic acid (PFNS)[N15]	20	Total ng	< 20	< 20	< 20
Perfluoropropanesulfonic acid (PFPrS)[N15]	20	Total ng	< 20	< 20	< 20
Perfluoropentanesulfonic acid (PFPeS)[N15]	20	Total ng	< 20	< 20	< 20
Perfluorohexanesulfonic acid (PFHxS)[N11]	20	Total ng	< 20	< 20	< 20
Perfluoroheptanesulfonic acid (PFHpS)[N15]	20	Total ng	< 20	< 20	< 20
Perfluorooctanesulfonic acid (PFOS)[N11]	20	Total ng	< 20	< 20	< 20
Perfluorodecanesulfonic acid (PFDS)[N15]	20	Total ng	< 20	< 20	< 20
13C3-PFBS (surr.)	1	%	67	62	65
18O2-PFHxS (surr.)	1	%	69	59	61
13C8-PFOS (surr.)	1	%	67	50	58
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	20	Total ng	< 20	< 20	< 20
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	20	Total ng	< 20	< 20	< 20
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	20	Total ng	< 20	< 20	< 20
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	20	Total ng	< 20	< 20	< 20
13C2-4:2 FTSA (surr.)	1	%	62	52	60
13C2-6:2 FTSA (surr.)	1	%	40	33	37
13C2-8:2 FTSA (surr.)	1	%	63	37	64
13C2-10:2 FTSA (surr.)	1	%	26	14	20
PFASs Summations					
Sum (PFHxS + PFOS)*	20	Total ng	< 20	< 20	< 20
Sum of US EPA PFAS (PFOS + PFOA)*	20	Total ng	< 20	< 20	< 20
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	20	Total ng	< 20	< 20	< 20
Sum of WA DWER PFAS (n=10)*	20	Total ng	< 20	< 20	< 20
Sum of PFASs (n=30)*	20	Total ng	< 20	< 20	< 20

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals	Melbourne	Feb 21, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Feb 21, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Feb 21, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Feb 21, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Feb 21, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Feb 21, 2022	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Cardno NT
Address: 93 Mitchell Street, Level 6
Darwin
NT 0800

Project Name: CW1121900 (SBWMF WATER MONITORING)

Order No.:
Report #: 864985
Phone: 8 8942 8200
Fax:

Received: Feb 16, 2022 5:00 PM
Due: Mar 4, 2022
Priority: 7 Day
Contact Name: Julian Brown

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						Aluminium	Boron	Chromium	Cobalt	Copper	Lead	Lithium	Mercury	Nickel	Zinc	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217																
Brisbane Laboratory - NATA # 1261 Site # 20794																
Mayfield Laboratory - NATA # 1261 Site # 25079																
Perth Laboratory - NATA # 2377 Site # 2370																
External Laboratory																
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
1	DS04	Feb 15, 2022		Dust Deposition	M22-Fe40907	X	X	X	X	X	X	X	X	X	X	X
2	DS02	Feb 15, 2022		Dust Deposition	M22-Fe40908	X	X	X	X	X	X	X	X	X	X	X
3	DS03	Feb 15, 2022		Dust Deposition	M22-Fe40909	X	X	X	X	X	X	X	X	X	X	X
Test Counts						3	3	3	3	3	3	3	3	3	3	3

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M22-Fe40909	CP	%	84			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M22-Fe40909	CP	%	109			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M22-Fe40909	CP	%	105			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M22-Fe40909	CP	%	103			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M22-Fe40909	CP	%	119			50-150	Pass	
Perfluorononanoic acid (PFNA)	M22-Fe40909	CP	%	128			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M22-Fe40909	CP	%	127			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M22-Fe40909	CP	%	107			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M22-Fe40909	CP	%	72			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M22-Fe40909	CP	%	106			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M22-Fe40909	CP	%	52			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M22-Fe40909	CP	%	84			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M22-Fe40909	CP	%	96			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M22-Fe40909	CP	%	77			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M22-Fe40909	CP	%	59			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M22-Fe40909	CP	%	65			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M22-Fe40909	CP	%	70			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M22-Fe40909	CP	%	80			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M22-Fe40909	CP	%	98			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M22-Fe40909	CP	%	76			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M22-Fe40909	CP	%	99			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M22-Fe40909	CP	%	97			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M22-Fe40909	CP	%	95			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M22-Fe40909	CP	%	114			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M22-Fe40909	CP	%	96			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M22-Fe40909	CP	%	112			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M22-Fe40909	CP	%	101			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M22-Fe40909	CP	%	116			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M22-Fe40909	CP	%	66			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	

Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M22-Fe40908	CP	Total ng	< 20	< 20	<1	30%	Pass	

Comments

Eurofins | Environment Testing accreditation number 1261, site 18217 is currently in progress of a controlled transition to a new custom built location at 179 Magowar Road, Girraween, NSW 2145. All results on this report denoted as being performed by Eurofins | Environment Testing Unit F3, Building F, 16 Mars road, Lane Cove West, NSW 2066, corporate site 18217, will have been performed on either Lane Cove or new Girraween site

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

Catherine Wilson	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Joseph Edouard	Senior Analyst-PFAS (VIC)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

Cardno NT
93 Mitchell Street, Level 6
Darwin
NT 0800

Attention: **Julian Brown**

Report **863122-S**
Project name SBWMF WATER MONITORING
Project ID CW1121900
Received Date Feb 11, 2022

Client Sample ID			**SS02**	**SS03A**	**SS03B**
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**M22-Fe25220**	**M22-Fe25221**	**M22-Fe25222**
Date Sampled			**Jan 21, 2022**	**Jan 22, 2022**	**Jan 23, 2022**
Test/Reference	LOR	Unit			
Heavy Metals					
Aluminium	20	mg/kg	15000	15000	16000
Boron	10	mg/kg	< 10	< 10	< 10
Chromium	5	mg/kg	180	160	32
Cobalt	5	mg/kg	< 5	< 5	< 5
Copper	5	mg/kg	< 5	< 5	11
Lead	5	mg/kg	21	28	21
Lithium	5	mg/kg	6.4	< 5	< 5
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	11	6.1	8.2
Zinc	5	mg/kg	45	11	42
% Moisture	1	%	13	7.3	21
Perfluoroalkyl carboxylic acids (PFCAs)					
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	69	72	69
13C5-PFPeA (surr.)	1	%	65	66	79
13C5-PFHxA (surr.)	1	%	76	80	78
13C4-PFHpA (surr.)	1	%	76	76	75
13C8-PFOA (surr.)	1	%	80	79	79
13C5-PFNA (surr.)	1	%	100	89	82
13C6-PFDA (surr.)	1	%	80	81	67
13C2-PFUnDA (surr.)	1	%	85	82	82
13C2-PFDoDA (surr.)	1	%	95	95	94
13C2-PFTeDA (surr.)	1	%	98	89	93

Client Sample ID			SS02	SS03A	SS03B
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			M22-Fe25220	M22-Fe25221	M22-Fe25222
Date Sampled			Jan 21, 2022	Jan 22, 2022	Jan 23, 2022
Test/Reference	LOR	Unit			
Perfluoroalkyl sulfonamido substances					
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	79	70	67
D3-N-MeFOSA (surr.)	1	%	84	83	89
D5-N-EtFOSA (surr.)	1	%	94	99	98
D7-N-MeFOSE (surr.)	1	%	78	76	80
D9-N-EtFOSE (surr.)	1	%	81	81	84
D5-N-EtFOSAA (surr.)	1	%	77	82	110
D3-N-MeFOSAA (surr.)	1	%	86	98	103
Perfluoroalkyl sulfonic acids (PFSAs)					
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	90	87	91
18O2-PFHxS (surr.)	1	%	68	78	71
13C8-PFOS (surr.)	1	%	70	70	72
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	107	86	96
13C2-6:2 FTSA (surr.)	1	%	108	80	95
13C2-8:2 FTSA (surr.)	1	%	112	101	108
13C2-10:2 FTSA (surr.)	1	%	91	124	123
PFASs Summations					
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals	Melbourne	Feb 15, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Feb 14, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Feb 15, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Feb 15, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Feb 15, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Feb 15, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Feb 14, 2022	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Cardno NT
Address: 93 Mitchell Street, Level 6
Darwin
NT 0800

Project Name: SBWMF WATER MONITORING
Project ID: CW1121900

Order No.:
Report #: 863122
Phone: 8 8942 8200
Fax:

Received: Feb 11, 2022 8:27 PM
Due: Feb 21, 2022
Priority: 5 Day
Contact Name: Julian Brown

Eurofins Analytical Services Manager : Michael Morrison

Sample Detail						Aluminium	Boron	Chromium	Cobalt	Copper	Lead	Lithium	Mercury	Nickel	Zinc	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217																	
Brisbane Laboratory - NATA # 1261 Site # 20794																	
Mayfield Laboratory - NATA # 1261 Site # 25079																	
Perth Laboratory - NATA # 2377 Site # 2370																	
External Laboratory																	
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**												
1	SS02	Jan 21, 2022		Soil	M22-Fe25220	X	X	X	X	X	X	X	X	X	X	X	X
2	SS03A	Jan 22, 2022		Soil	M22-Fe25221	X	X	X	X	X	X	X	X	X	X	X	X
3	SS03B	Jan 23, 2022		Soil	M22-Fe25222	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						3	3	3	3	3	3	3	3	3	3	3	3

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Aluminium	mg/kg	< 20			20	Pass	
Boron	mg/kg	< 10			10	Pass	
Chromium	mg/kg	< 5			5	Pass	
Cobalt	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Lithium	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heavy Metals							
Aluminium	%	106			80-120	Pass	
Boron	%	82			80-120	Pass	
Chromium	%	108			80-120	Pass	
Cobalt	%	110			80-120	Pass	
Copper	%	102			80-120	Pass	
Lead	%	108			80-120	Pass	
Lithium	%	96			80-120	Pass	
Mercury	%	99			80-120	Pass	
Nickel	%	97			80-120	Pass	
Zinc	%	103			80-120	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	104			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	83			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	85			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	81			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	93			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	98			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	98			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	110			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	103			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	91			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	80			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	99			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	96			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	105			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	77			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	87			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	83			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	88			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	80			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	135			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	90			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	90			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	90			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	77			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	96			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	115			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	102			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	105			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	109			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	108			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium	M22-Fe22362	NCP	%	71			75-125	Fail	
Boron	M22-Fe21017	NCP	%	85			75-125	Pass	
Chromium	M22-Fe21017	NCP	%	94			75-125	Pass	
Cobalt	M22-Fe21017	NCP	%	103			75-125	Pass	
Copper	M22-Fe21017	NCP	%	101			75-125	Pass	
Lead	M22-Fe21017	NCP	%	106			75-125	Pass	
Lithium	M22-Fe21017	NCP	%	96			75-125	Pass	
Mercury	M22-Fe21017	NCP	%	104			75-125	Pass	
Nickel	M22-Fe21017	NCP	%	100			75-125	Pass	
Zinc	M22-Fe21017	NCP	%	93			75-125	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M22-Fe25220	CP	%	111			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M22-Fe25220	CP	%	96			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M22-Fe25220	CP	%	92			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M22-Fe25220	CP	%	87			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M22-Fe25220	CP	%	102			50-150	Pass	
Perfluorononanoic acid (PFNA)	M22-Fe25220	CP	%	109			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M22-Fe25220	CP	%	115			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M22-Fe25220	CP	%	127			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M22-Fe25220	CP	%	109			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M22-Fe25220	CP	%	105			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M22-Fe25220	CP	%	91			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M22-Fe25220	CP	%	102			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M22-Fe25220	CP	%	105			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M22-Fe25220	CP	%	110			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M22-Fe25220	CP	%	93			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M22-Fe25220	CP	%	98			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M22-Fe25220	CP	%	87			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M22-Fe25220	CP	%	88			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M22-Fe25220	CP	%	84			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M22-Fe25220	CP	%	126			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M22-Fe25220	CP	%	96			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M22-Fe25220	CP	%	120			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M22-Fe25220	CP	%	100			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M22-Fe25220	CP	%	69			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorooctanesulfonic acid (PFOS)	M22-Fe25220	CP	%	118			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M22-Fe25220	CP	%	115			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M22-Fe25220	CP	%	100			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M22-Fe25220	CP	%	106			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M22-Fe25220	CP	%	100			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M22-Fe25220	CP	%	108			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	M22-Fe26727	NCP	mg/kg	12000	12000	1.0	30%	Pass	
Boron	M22-Fe26727	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Chromium	M22-Fe26727	NCP	mg/kg	27	27	1.0	30%	Pass	
Cobalt	M22-Fe26727	NCP	mg/kg	8.0	8.1	1.0	30%	Pass	
Copper	M22-Fe26727	NCP	mg/kg	18	18	1.0	30%	Pass	
Lead	M22-Fe26727	NCP	mg/kg	130	130	1.0	30%	Pass	
Lithium	M22-Fe26727	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Mercury	M22-Fe26727	NCP	mg/kg	0.1	0.1	1.0	30%	Pass	
Nickel	M22-Fe26727	NCP	mg/kg	17	17	2.0	30%	Pass	
Zinc	M22-Fe26727	NCP	mg/kg	100	110	1.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M22-Fe25126	NCP	%	45	43	5.0	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M22-Fe26254	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M22-Fe26254	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	M22-Fe26254	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M22-Fe26254	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

Michael Morrison	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Joseph Edouard	Senior Analyst-PFAS (VIC)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

APPENDIX

E

SWMS AND SOPS

Cardno

now

Stantec

PN3.04 - Groundwater Sampling Procedure

1 INTRODUCTION

This document specifies the procedure of Cardno's adopted techniques for groundwater sampling for environmental investigations.

2 PURPOSE

This document provides guidance for the use of various sampling techniques in order to obtain representative and unadulterated samples of groundwater from monitoring bores for the purpose of physical and chemical analysis of water samples.

3 GLOSSARY

1. **Bore**: Any bore, well or excavation or any artificially constructed or improved underground cavity used or to be used for the purpose of (a) the interception, collection, or storage of groundwater; or (b) groundwater observation or the collection of data. Source: EPA *Groundwater Sampling Guidelines* Publication 669 April 2000.
1. **Well**: a licensed groundwater bore.
2. **SWL**: Standing / Static Water Level 1) the elevation or level of the water table in a well when the pump is not operating. 2) the level or elevation to which water would rise in a tube connected to an artesian aquifer, or basin, or conduit under pressure. Source: US EPA website
3. **RWL**: Relative Water Level – surveyed and calculated water level referenced to an arbitrary fixed elevation level.
4. **AHD**: Australian Height Datum
5. **Recovery**: the difference between the measured water level in an observation well at a given time after pumping stops and the SWL?
6. **TOC**: Top of Casing
7. **Stick up**: The distance between TOC and ground level (can be negative when below ground level)
8. **Purging**: The process of removing stagnant water from a bore before sampling.
9. **Development**: The process of removing fine sand, silt and clay from the bore annulus around the bore screen and breaking down the drilling mud on the borehole wall.
10. **NEPM 2013**: National Environment Protection Measure 2013

4 SCOPE

The scope of this document covers the following list of groundwater monitoring activities;

1. Preparation for Fieldwork
2. Inspection of Bore
3. Water Level measurement
4. LNAPL / PSH measurement
5. Bore Purging

6. Sampling
7. Sample Handling & preservation
8. Quality control – Replicates
9. Quality control – Decontamination
10. Sample handling, forwarding and CoC
11. Field Records

4.1 Related Procedures/Forms

1. F3.01 ESA Planning Procedure
2. F3.01 Site Investigation Planning Checklist
3. F3.01 Field Work Daily Report
4. F3.01 QC Sample Register
5. F3.04 Groundwater Sampling Field Record
6. CLP-P2-4-QF01 Chain of Custody
7. PN3.04 Groundwater bore volumes
8. PN3.04 Slug test procedure (aquifer response)
9. Bore installation
10. PN3.04 Bore Development Procedure
11. Pumping tests
12. Equipment Field Calibration
13. Waste Management

4.2 Preparation for Field Work

Prior to commencing fieldwork the following preparations are required; Adapted from “EPA Groundwater Sampling Guidelines Publication 669 April 2000” and NEPM 2013

1. Define objectives of groundwater sampling program (to be found in Sampling and Analysis Plan (SAP) for specific site) – PM to complete as per NEPM requirements setting out data quality objectives
2. Review and compile results from past groundwater sampling events (where available) – PM to complete
3. Site specific parameters to be sampled & analysed (to be found in SAP and Work Request Form - WRF)
4. Number / frequency of samples to be collected (to be found in SAP and WRF)
5. Bore details – location, depth & diameter of bore, depth and length of screened interval, depth to groundwater, drilling, installation and development details (to be found in Bore Logs)
6. Previous field sheets, borelogs, water level gauging/purging data and bore construction details.
7. Sampling protocol – purging procedure and justification for this method, in-field measurements, sampling technique and equipment, filtration and preservation requirements, and QA/QC (to be found in this procedure and the SAP and WRF for site specific details)

8. Organise sample storage and transportation to the laboratory (NATA accredited) and order appropriate sample bottles, trip blanks and preservatives as required
9. Order, check and or/calibrate sampling equipment and/or field meters and ensure they are working correctly (either using pre-calibrated meters provided by rental company or calibrated prior to or during field events, where required following calibration procedures/manuals)
10. Sample forms and documentation including chain of custody forms, groundwater sampling field records etc
11. Notification to owner of bore(s) of proposed sampling and arrange for access (e.g. inductions, keys, etc).

4.2.1 Sample Registers

A sample register should be used for more than 15 bores located on a site. Site specific field records should be prepared in conjunction with the PM depending on the nature of the project and the number of monitoring events planned (refer to SAP and/or WRF for details).

4.2.2 Equipment Checklist

Please refer to F3.01 Site Investigation Planning Checklist for equipment required for groundwater sampling.

All equipment for groundwater sampling shall be stored in a dust free environment. Pumps and tubing shall be shrouded in plastic wrap to prevent ingress of contaminants during shipment of equipment.

4.3 Inspection of Bore

When inspecting the groundwater bore prior to sampling the following details should be recorded;

1. Bore condition / Locked? Damaged? Inundated?
2. Type of protective cap / cover
3. Water level measurement point
4. RL of measurement point (m AHD)
5. Casing stick up
6. Casing type and diameter
7. Any other useful observations

All details are to be recorded on document F3.04 Groundwater Sampling Field Record

4.4 Water Level Measurement

The first operation performed at each bore is to open the well cover and remove the well cap and measure for vapours particularly at bores known to have highly contaminated groundwater. The PID is held just over the top of the well and a measurement is recorded in your field notes as well as a description of odours identified. Refer to your JSA if vapours continue to emanate from the bore above action levels set for the assessment within the breathing zone.

Prior to groundwater purging/sampling a water level shall be recorded. This should be performed with a water level dip meter or an interface probe. If it safe and practical to do so, all groundwater wells should be measured on the same day, to provide accurate and consistent water levels (refer to WRF for details).

1. Measurements shall be made of the distance between the water level and the top of the protective casing (TOC) from a marked measurement point on the TOC, but must be referenced to ground level when bores have been surveyed to Australian Height Datum (AHD).
2. The water level dip meter should be lowered slowly down the well, until a beeping sound is heard. Slowly lift the probe up until no sound is heard and lowers the probe even slower than the first time to ensure the beeps indicate a water level within the well. Record this measurement as standing water level in meters below top of casing (TOC) ("SWL .m TOC to the nearest mm") on the document F3.04 Groundwater Sampling Field Record.
3. Record the depth of the well lowering the dip meter to the bottom of the bore. Record this level as the depth of the bore (m TOC). Turn the dip meter off to remove the beeping sound.
4. Decontamination of the dip meter should occur between each bore. Refer to section 4.7.1
5. Particular care needs to be taken to the probes during fieldwork and during decontamination process which includes rinsing the probes and retracting the tape of the dip meter evenly without kinks, twists or knots.

4.5 NAPL / PSH Measurement

Non aqueous phase liquids (NAPLs) are organic fluids that are immiscible (do not mix) with water. They can be lighter (LNAPL) or denser (DNAPL) than groundwater. Where LNAPL is present within a bore, it is not possible to obtain a representative sample of groundwater for dissolved phase of petroleum components. (EPA *Groundwater Sampling Guidelines*, Pub 669).

The following points should be noted for when sampling NAPLs;

- Sample at the interval where the NAPL is most likely to be encountered if fingerprint analysis is required.
- Do not purge before measuring the thickness of or sampling from the NAPL layer
- Measure LNAPL thickness with an interface probe
- These wells where LNAPL may be located should be measured last. Groundwater wells located up gradient or less contaminated should be measured first (see WRF for details for site).

1. To measure the interval where NAPL is present lower an oil/water interface probe down the bore very slowly from the measuring point. It is important that the interface meter is lowered slowly so that the probe is not plunged through the thickness of NAPL present into the dissolved phase water. The probe will not differentiate between the two layers if this occurs and it is best to start again. Lower the probe slowly until a continuous tone is heard at the top of the NAPL. Record this level as depth to product and continue to slowly lower the probe until a beeping sound is heard. Record this level as depth to water. Once probe is submerged in water pull the probe back up slowly to confirm the measured thickness of LNAPL. *Note : It is important that the interface probe is lowered through the water and pulled back slowly so that LNAPL is not caught in the instrument (probe head), which can give a false recording of LANPL thickness. The Interface probe can also be used for measuring DNAPL at base of bore using same approach* Record the depth of the well lowering the dip meter to the bottom of the bore. Record this level as the depth of the bore. Retrieve the interface probe from the bore and thoroughly decontaminated probe. Refer to section 4.7.1.
2. The thickness of NAPL is the difference between the depth to product and the depth to water. To confirm the presence of NAPL use a bailer to retrieve a sample. Ensure that you use a clear bailer and only collect the top layer of liquid. Approximately half to three quarters of a bailer so you can distinguish between the water and the NAPL. Again slowly lower the bailer, do not plunge it through the NAPL.
3. Clear photos should be taken of the bailer with NAPL present as well as indicating the bore number on the bailer. Record colour and appearance of NAPL on sampling sheet.

Please refer to the EPA Groundwater Sampling Guidelines Pub 669 for further information about sampling NAPLs and a separate procedure to collect LNAPL samples for specific analysis. (Preparation of a separate procedure to undertake this task is in progress).

To sample NAPL a syringe or bailer can be used to transfer into a vial. Check with your laboratory to the volumes required for fingerprint analysis.

4.6 Bore Purging

In order to ensure that each sample of water is representative of the groundwater in the formation outside the bore and unaffected by the bore or its connection with the atmosphere, each bore must be purged. A rule of thumb used for purging is to remove three bore volumes, based on the casing volume plus 30% of the sand pack annulus volume. Purge volumes can be reduced by the use of low flow pumping equipment (e.g. bladder pumps or peristaltic pumps) using field parameter stabilisation to determine the end point of purging instead of bore volumes (see instructions below), which may produce a large volume of contaminated water requiring disposal.

For a quick calculation of purging volumes for groundwater bores the water column (depth of the well-SWL) multiplied by 5 should be used for a 50mm well. Estimates of the amount of purging required before going into the field if data from previous groundwater monitoring events is not available. Bore volume must be calculated before purging each well and recorded on F3.04 GW Sampling Field Record.

The following methods can then be used to purge a well before sampling (refer to WRF for method to be used for specific site):

1. Bailing
2. Connecting twine to a bailer, lower it down into the bore/monitoring well until it is fully submersed.
3. Lift the bailer one or two times in the water column to ensure the bailer is full and remove the groundwater from the well.
4. At each bore volume record the field parameters of a small sample as described further below. Keep removing water until the field parameters stabilise or the bore becomes dry.
5. Sampling can occur if the bore becomes dry and the bore has recovered. However contact the PM and confirm this procedure. The bailer can be left in the well with the twine secured until sampling or further purging is undertaken.
6. Record the time the sampling commenced and concluded in your field notes.

Low Flow Pumping

1. Connect a submersible low flow pump to a controlled flow cell powered by a generator or bottled gas cylinder. (Set up and use of this method requires training in the field).
2. Lower the pump to the middle or just above the middle of the well screen interval. Be consistent with either sampling depth through the groundwater monitoring event. Use the dip meter to check the depth of the pump before commencing.
3. Lower a water level meter inside the well and record the standing water level with the pump in the well.
4. Set the pump to remove water at low cycle (e.g. 0.1L/min) and monitor the standing water level. Set the pump to remove water at rate where the standing water level does not drop more than 10cm below the original water depth.
5. If draw down is continuously greater than 20cm and the aquifer is not recovering on the lowest pump cycle - Stop using this method and seek alternative purging methods in discussion with the project manager such as bailing or additional time to proceed with low flow sampling at a very slow rate.

6. Collect field parameters during this process refer to section 4.5.1. Once stabilisation of parameters and water levels occur, sampling can commence refer to section 4.6. This method works best in fractured rock aquifers. Seek approval from the project manager before changing the sampling method. Record all changes to planned sampling methods for each bore.

Pumping Bore Volumes (Set up and use of this method requires training in the field).

- Using a hydrostatic (Waterra) pump attached to a monitoring bore can remove a large volume of water and useful for deep bores, particularly at landfills.
- Attach a non-return valve to a plastic tubing of suitable diameter. Lower the tubing into the bore and turn the pump to a rate where water is removed at a rate that can be collected. Collect field parameters after each calculated bore volume and sample once these parameters have stabilised.

Note that NEPM 2013 highlights that purging via bailing or pumping is less preferred to low flow sampling. A justification for the purging selection should be included in the planning stage. Refer to section 4.5, dot 6 as well as alternative methods if low flow sampling is not appropriate. Consideration of the geological formation, bore development and objectives of the sampling is required to select an alternative method.

4.6.1 Collection of Field Parameters

A critical part of purging during each method outlined above is the collection of field parameters of the extracted groundwater. This is to ensure to collect water that is representative of the aquifer and not the stagnant water present in the well or just used to take chemical readings. This connection with the aquifer can be measured using physico-chemical parameters relevant to the conditions, but pH and electrical conductivity are the most commonly used for this purpose. It is recommended that at least three bore volumes should be removed before accepting a stable pH as evidence of effective purging (unless a low flow purging method is used), in some cases one bore volume may be all that can be purged. The multi port flow cell allows these parameters to be measured continuously for methods where a continuous flow of water is extracted. Or the probes on a water quality meter can be used for a small sample of groundwater collected in a small container after each bore volume. This water must not be used for sampling.

The EPA Groundwater Sampling Guidelines state that the following parameters may be considered stable when three consecutive readings (obtained several minutes apart) are within;

7. ± 10% for dissolved oxygen (DO)
8. ± 3% for electrical conductivity
9. ± 0.1 for pH
10. ± 10 mv for redox potential
11. +/- 10% Temp (°C)

Purging the bore dry is not recommended as this may expose the sample to air producing an unrepresentative sample. However this does occur in some formations that are slow to recover. Discuss other sampling methods for such wells if this is the case with the PM.

The record of purging and collecting field parameters shall be recorded on F3.04 GW Sampling Field Record at each bore volume or after every few minutes of purging. This should include information about water level recovery rates, field parameters and any other observations including colour, turbidity, odour, unusual signs.

4.7 Sampling

Groundwater samples shall be obtained following bore purging and using the appropriately preserved and pre-labelled (see further below for labelling instructions) sample bottles provided by the laboratory.

1. Before the sample is taken the water quality field measurements should be taken using the flow cell. Results shall be immediately recorded on the field recording sheets.
2. The pump discharge hose or bailer nozzle (using a low flow discharge nozzle provided with the bailer) shall be placed as close as practicable to the bottle neck such that the water is not aerated as it enters the bottle.
3. The bottle shall be filled completely minimising or avoiding turbulent filling, by slightly holding bottles inclined from the vertical and letting water flow down the sides of the bottles.
    - When bailing adjust the sampling nozzle to a low stream over a bucket then fill vials as full as possible. The lid of the vial can be filled, then tipped over the vial to form a meniscus
    - When low flow sampling reduce the flow rate to fill sample vials and the lid and repeat as above.
4. The bottle cap shall be firmly fitted to exclude air or volatiles from the sample straight away
5. Sampling of groundwater in vials and glass jars require a convex meniscus to ensure air does not enter the sample jar. Once the cap is firmly fitted turn over the sample vials or jars and check for any air bubbles. If air bubbles are observed re-open sample container and top up as described above and repeat procedure until no air bubbles are observed.
6. Multiple sample containers may need to be filled to satisfy the varying preservation requirements for testing of different analytes or laboratory quality control requirements. This includes extra bottles as outlined in the NEPM 2013. Refer to your SAP/WRF, project manager or laboratory for bottle and sampling requirements.
7. Observations should be recorded during sampling including sample location, sample turbidity, odour, presence of any NAPLs and colour and recorded on the field recording sheets.
8. Field filtering is required where the water is turbid, particularly where samples are preserved in acid for metals analysis. Filtering should occur in the field during sampling to ensure sample results are indicative of sampling conditions in the aquifer.
9. Filtering can be undertaken by applying vacuum or pump pressure. Either inline filters can be attached to the sample tubing outlet (for pumped bores) or sample needs to be transferred into another container (e.g. syringe with filter attached or a filter jar with vacuum pump). The recommended filter pore size is 0.45um. Dedicated filtering devices should be used for each groundwater bore that is sampled.
10. Alternatively as a secondary option in consultation with the PM, if field filtering cannot be performed in the field an **unpreserved** sample container can be used to collect the sample, the sample will be chilled and shipped to the laboratory with minimum delay. The laboratory should be informed of the need to filter immediately on receipt of the sample (to be recorded on COC).

4.7.1 Naming Groundwater Samples

Samples shall be named consistently and number order for each site as follows:

1. MW01_(insert depth) for monitoring wells,
2. QC01_(insert date) for quality control samples such as duplicates, triplicates, field, rinsate and trip blanks.

Sample container labelling, preservation and storage shall be in accordance with the Australian Standard (AS 4482.1-1997) and will need to include:

3. Name of the sampling location on the side and lid of the jar or bottle

4. Site location (suburb)
5. Job Number
6. Date of Sampling
7. Initials of the Sampler

4.8 Sample Quality Control and Quality Assurance:

4.8.1 Duplicates and Triplicates

A minimum of one duplicate and one triplicate sample shall be taken for every 20 primary samples collected (refer to SAP/WRF for site specific details). The duplicate and triplicate samples shall be collected as follows:

1. A duplicate and triplicate sample should be collected at the same location as the primary sample at predetermined locations and/or locations where contamination is identified. Three samples from the one location aims to confirm the presence of contamination on the site and cross check the laboratory analysis program.
2. Duplicates / triplicates should include blind and split samples taken immediately at the same time as the primary sample. Samples collected for duplicates, triplicates and laboratory duplicates should be filled at the same time and not one bottle at a time. Samples should be numbered to hide the identity of the primary sample.
3. Three bottles are labelled (refer to naming below) and sample is evenly distributed over each jar.
4. Each of the three bottles are filled to the top as quickly as possible to minimise the loss of VOCs without soils caught up in the thread and the jar cap is screwed on tight.
5. The primary location where duplicate and triplicate sampling occurred is recorded on Cardnos QAQC record sheet.
6. Additional duplicates and triplicate samples can be collected to further assess contaminated areas on the site. These samples can be placed on hold pending analysis of the primary sample.
7. The duplicate sample shall be labelled QC01 or sequential numbering order for QC samples taken at that site, and shall also be entered on the F3.01 QC Sample Register and the F3.04 GW Sampling Field Record, in the space provide for "Duplicate Reference".
8. For large sites where multiple field crews are conducting work simultaneously a site specific QC register shall be prepared by the field or project manager so that each quality control sample is recorded correctly and uniquely (refer to site specific SAP/WRF).

4.8.2 Rinsates, Field Blanks and Trip Blanks.

Rinsates, Field Blanks and Trip Blanks allow for a high level of quality when sampling groundwater in the field. Minimum requirements for control samples are subject to the specific requirements of the project (see SAP/WRF for site specific details) but as a minimum, they are as follows:

1. **One rinsate** collected per day of a piece of equipment that is in regular contact with the samples. Eg a sample tube, the pump, a glove. A rinsate blank is used to check the effectiveness of re-useable equipment decontamination; therefore it can be undertaken at the end or close to the end of each day.
2. **One rinsate** shall be collected in the sample bottles and filling them with de-ionised water supplied by the laboratory. The water is decantered over the appropriately selected piece of equipment. The bottles are filled to the top. The QA/QC sampling requirements should be taken from the WRF and SAP.

3. **One field blank** is generally collected per day, but specifics depending on the sampling regime of the project (see SAP/WRF). A field blank shall be collected in the sample bottles and filled using de-ionised water supplied by the laboratory. The water is decantered into the bottles and filled to the top. A field blank is to assess the potential for contaminants in the laboratory water or in the ambient air in the vicinity of sampling to effect the results.
4. **One trip blank** per esky. Trip blanks are supplied by the laboratory with the sample containers prior to the sampling event and are placed in the eskies. The trip blank is a control sample to check if that sample integrity is not lost during transit to the laboratory, particularly for the loss of volatile compounds.
5. All QAQC samples discussed above are handled as follows:
    - These samples are placed on ice and are should remain chilled from collection on site to delivery to the laboratory under chain of custody.
    - Labelled as per section 4.8
    - Correctly recorded on the COC for analysis as per section 4.8, refer to the SAP/WRF or PM for analysis requirements.
    - Record the correct primary sampling and control details on a separate record sheet. F3.01 QC Sample Register

4.8.3 Equipment Decontamination

Decontamination is the process of neutralizing, washing, rinsing and removing material from exposed surfaces to minimise cross contamination of samples from sampling equipment.

As a minimum equipment such as low flow pumps, dip meters or grab samplers used to collect water samples shall be washed with biodegradable and phosphate free detergent and rinsed with tap and distilled water. Three buckets shall be set up prior to sampling to undertake this process as follows:

1. Bucket 1: Filled with water and decon solution for washing and scrubbing (if required) field equipment in contact with samples
2. Bucket 2: Filled with tap water to rinse equipment of detergent
3. Bucket 3: Filled with distilled water to further rinse equipment of detergent
4. Remove soil adhering to the sampling equipment. Then wash the equipment by scraping, brushing or wiping with a brush using water and decon bucket 1.
5. Rinse thoroughly in Bucket 2 with tap water.
6. Rinse thoroughly in Bucket 3 to remove detergents and dry with disposal towels.
7. Repeat steps above between each bore/sampling location

4.9 Sample Handling & Preservation

Sample bottle labelling, preservation and storage shall be in accordance with Australian Standard AS2031.1 Preservation & Storage of Water Samples. Samples shall be preserved according to the requirements of testing for the analysis required, for example acid preservation, freezing etc. Appropriately pre-preserved sampling containers need to be obtained from the laboratory prior to the field mobilisation for the analytes required (as per the WRF and SAP).

4.10 CoC and Primary and Secondary Laboratories

Chain of Custody (CoC) forms are used for the purpose of certifying the integrity of samples between the time taken and when received at the laboratory. The COC is a legal document for transporting groundwater samples and requesting analysis from the primary/secondary laboratory. The following

sequence of actions and requirements shall be used to prepare separate COC forms F3.01 Chain of Custody for the primary and secondary laboratory when sending groundwater samples:

1. At the completion of the sampling event (or day of sampling), the samples shall be removed from the Eskies and a check made that all sample bottles are present. These should then be checked against the bore location list to ensure that all bores have been sampled.
2. Pack the samples bottles in the Eskys in an upright position and ensure that seals or caps are secured to prevent leakage. Pack the supplied freezer bricks evenly around the water samples. Ensure that samples are packed to prevent breakage during transport by using bubble wrap.
3. The sample number, details of each container type to be placed in each Esky, location and depth of the sample, time of sampling, and details of the preservative added shall be entered onto a CoC Form.
4. The address of the laboratory, phone number and contact person is completed on the COC.
5. The analysis requested and which samples will be placed on HOLD. The correct laboratory codes for the analysis requested written next to the analysis requested. Specific project quote numbers or codes for specific analysis or special rates should also be included. This is information should be in the WRF and discussed with the PM on site. If this is not practical, samples on the COC can be placed on HOLD, with a supplementary COC sent within 24-48hours of the samples being sent.
6. Correct names of the samples with the corresponding sample jars including all quality control samples are recorded.
7. Field observations of strong odours or signs of contamination of particular samples are added on COC
8. The requested turnaround times. Eg Standard (5 days), Fast tracked (3 days), Urgent (24 or 48 hrs). Turnaround times within 5 days require confirmation with the laboratory prior to the sampling.
9. The names/signatures of the sampler and/or the person relinquishing the sample are added. The COC is signed by the courier picking up the samples (either from the office or in the field) is added.
10. Secure the lids on the Eskies and tape the lids in place with packing tape.
11. A copy of this signed COC form is kept as a record of dispatch to the laboratory and is placed inside the respective eskies in a plastic bag (such as a GLAD zip lock bag).

4.11 Field Notes & Fieldwork Requirements

1. Attend a kick off meeting with the project manager or project associate
2. Prepare a job safety analysis and/or HASP
3. Confirm sample naming convention for the site
4. Good on site practices and housekeeping (keep a tidy work area):
5. Call into the PM or nominated buddy at the start and end of each day and for any expected events.
6. The order of sampling soil bores is from up gradient or least contaminated bores, moving closer to bores located near source areas. The safety of staff and the practicality of undertaking sampling in this order takes precedence over sampling in this order (refer to SAP/WRF and discuss with PM).
7. All sections of the field notes must be filled in out in the field and are legible for someone else to read and transfer electronically if required. The vehicle or site office on site can be used during periods of inclement weather.
8. Refer to the waste management procedure for further guidance. As a minimum the field supervisor responsibility includes the following:

- Safe and secure location of drums, skip bins or bulky bins to collect “waste” generated from field assessments. The location of drums should be confirmed with the PM.
- Correct labelling of drums for soil or groundwater waste on the side of the drums with stickers provided by the waste contractor providing the drums.
- Delivery and pick up drums should occur at the start and conclusion of the fieldwork duration. If further drums are required these can be arranged by the field supervisor in conjunction with the PM. Waste transport certificates need to be completed with the waste contractor and copies of these documents kept safely with the field notes
- Your field notes should include the number of drums delivered, date, time and the number of drums collected which is full, part full or empty.
- Waste PPE, consumables such as bailers, gloves or tubing should be placed in drum on site and labelled correctly.
- All field notes should be scanned into the fieldwork folder at the conclusion of the fieldwork program.
- Data Quality Management requirements should be discussed with PM or team leader when results are received from the laboratory.

9. Clean up and secure sampling location to conditions as found prior to sampling prior to leaving location.

Specific project requirements will be undertaken for transportation of samples due to varying analysis and holding times and this shall be confirmed and pre-arranged by the field supervisor with the PM prior to commencing work on the site.

5 References

Australian/New Zealand Standard (1998). AS/NZS 5667.11:1998. Water Quality - Sampling, Part 11: Guidance on Sampling of Groundwaters.

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Byrnes, M. E. 2009. Field Sampling Methods for Remedial Investigations. Second Edition, CRC Press, 322pp

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F3.04 – Groundwater Sampling Field Record

Site / Project:		Bore ID Number:
Client:		Job No.
Person Sampling:		Initials:
Bore / Site Details		
Bore Condition / Locked?	Type Protect. Cap / Cover:	Bore Depth (bTOC):
Inner casing/screen type & diameter:	Screen interval (bgl):	SWL (bTOC)
WL Measurement Point	RL of measurement point (mAHD)	SWL Date/Time
Other Observations on Bore/Site		
Bore Purge Data		
Purge method:	Bore Volume (L):	Purge Date:
Purge rate (L/min):	Total Purge volume (L):	LNAPL / PSH Thickness (mm) *None / ……..mm*

Purge Field Physicochemical Measurements:								
	Reading1	**Reading 2**	**Reading 3**	**Reading 4**	**Reading 5**	**Reading 6**	**Reading 7**	**Reading 8**
Start Time:								
DO (mg/L) ±10% (or ±0.2 if DO<2 mg/L)								
EC (µS/Cm) ±3%								
pH ±0.1								
Eh (mV) ±10mV								
Temp (°C)								
SWL (m) after								
Cum. Volume (L)								
Water Colour								
Turbidity ±10%								
Other Observations / Notes								

Sample Container & Preservation Data					
Number of sample container: (Include QC samples)	1	2	3	4	5
Container Volume					
Container Type					
Filtration					
Preservation					
Sample Number (for Lab ID):					
QC Dup Sample No.:					

PN3.08 - Surface Water Sampling Procedure

1 Purpose

This document specifies the procedure for conducting surface water sampling.

2 Scope

The procedure provides guidance for the collection of surface water (e.g. creek, river, dam) from a surface water body for laboratory analysis or testing for field parameters on site.

3 Equipment

The equipment required for surface water sampling can change depending on the nature of the surface water body that requires sampling. The following pieces of equipment and fieldwork sheets may be required:

1. Site specific JSA
2. Appropriate PPE to site conditions & potential contaminants of concern
3. Sampling plan
4. Surface water sampling equipment:
    - Telescopic scoop
    - Van Dorn sampler
    - Sampling containers
5. Sampling containers as required for analysis
6. Chain of Custody
7. Eskies & ice
8. Water quality meter
9. Dip meter (potentially)
10. GPS
11. Surface water sampling record F3.08 Surface Water Sampling Field Record

Additional equipment (e.g. boat) may be required depending on the nature of the surface water body to be sampled and can include, but not limited to, the following scenarios:

1. Shore line (e.g. beach) from ocean/ bay
12. Creek and/ or river
13. Dam, pond, lake and/ or wetland
14. Flooded excavation
15. Drain

4 Procedure

4.1 Preparation

1. Site specific JSA must be prepared and reviewed to identify any hazards that could potentially be at the site or associated with the sampling method. This may include:
   a) Unstable ground
   b) Slippery/ wet surfaces
   c) Access constraints
   d) Hazards involving sampling from a vessel (if applicable); see . T:\OHS Management System\OHS Safe Work Procedures\SAFE WORK PROCEDURE Small Water Craft.doc
   e) Flowing water or stagnant water
2. Establish the sampling objectives to select the correct sampling method and equipment:
   a) Required number and depth of samples
   b) Site sampling method using the correct sampling equipment to safely achieve the objectives of the sampling fieldwork (see Table 1).

Table 1: Surface Water Sampling Methods & Different Sampling Equipment

Sampling Equipment	Sampling Method Comments
Telescopic scoop 	▪ Multiple samples at near surface only ▪ Not suitable for multi depth sampling ▪ Not suitable for deeper water sampling (i.e. <3.0 m) ▪ Sample from embankment, vessel and/ or fixed structure over water
Van Dorn Sampler (Horizontal Water Sampler) 	▪ Multiple samples at varying depths ▪ Suitable for deep water sampling (i.e. >3.0 m) ▪ Able to sample in flowing water environments (Note: difficult to ensure sampler is at required depth in high flowing water environments due to under currents) ▪ Sample from vessel or structure over water
Sample Container	▪ Shallow water (i.e. <0.5 m) ▪ Flowing water (at low flow rates) ▪ Stable ground & easy access to sampling point

3. Establish if in situ water quality parameters are required as part of the sampling program. Ensure that the water quality instrument has the necessary capabilities.
4. Establish if a dip meter is required for multi depth sampling.

4.2 Sampling Method

Surface water sampling should always be taken before sediment samples (if applicable) so as to limit sediment disturbance potentially affecting surface water samples and water quality field parameters, see Figure 1.

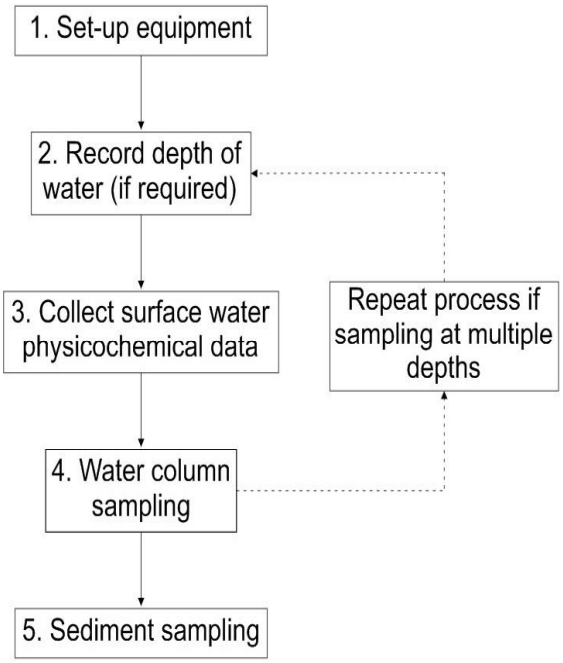

Figure 4-1 Figure 1: Surface Water Sampling Method Flow Chart

1. Slowly measure and record the depth of the surface water body using the dip meter. **Limit any water disturbance** that could occur when using the dip meter (e.g. dropping the dip meter can result in mixing of the water column).
2. Record the surface water field parameters (physiochemical data) using the surface water sampling field sheet.

   c) Lower the water quality meter sensors into the water until **all** sensors are submerged and record field parameters

   d) If further sampling is required, lower the water quality meter along with the dip meter to ensure target depth/s are accurately measured; record physiochemical data once stable

   e) Repeat step b) until the bottom of the surface water body or the specified sampling depth is reached.

   Limit any water disturbance while taking the surface water field parameters being careful to limit any excessive water mixing or sediment disturbance in the surface water body being sampled.

4.2.2 Telescopic Scoop Method

1. Be aware of surroundings as a fully extended scoop is approximately 4.0 m in length. When retrieving the sample, ensure that the rod is safely placed in an area and does not pose any trip hazard or accidentally pushes into a bee hive or an electric fence!
2. Ensure scoop has been decontaminated before use and sampling cup is firmly attached to the rod
3. Establish a safe sampling point
4. Extend scoop to required length (note: take care of the weight of the sample scoop which increases when the sampling cup is filled on the end of the fully extended - 4 m rod)
5. Rinse the scoop, downstream from intended sampling location, by simply dipping it into the water a couple of times. Discharge any excess water.

6. Lower scoop into water to required depth; if surface water body is flowing, sample upstream from operators sampling position (the scoop is not suitable for accurately sampling at various depths). Discharge the first sample of water from the scoop downstream from sampling point. Collect the water samples as required.
7. Retrieve the scoop and place surface water sample directly into the required sampling containers
8. Place samples into a chilled esky.
9. Decontaminate the scoop between each sample location

4.2.3 Van Dorn Sampler (VDS) Method

1. The VDS can be hired from Eco Environmental (Adelaide)
2. Ensure the VDS has been decontaminated before use
3. Ensure the rope is securely attached to the top (Purchase a new untreated cotton and/or nylon rope before each project to ensure cross contamination does not occur)
4. Place the rope through the 'messenger' and ensure it is securely attached
5. Establish safe sampling point
6. Set the VDS to its sampling set up, shown here in Table 1 and
7. Slowly lower the VDS into the water column allowing water to pass through the sampling chamber as it comes to rest horizontally at the sampling point (see Figure 2).
8. Release the messenger down the rope and retrieve VDS using the rope
9. Pour surface water sample from the 'taps' of the VDS directly into required sampling container and store in chilled esky

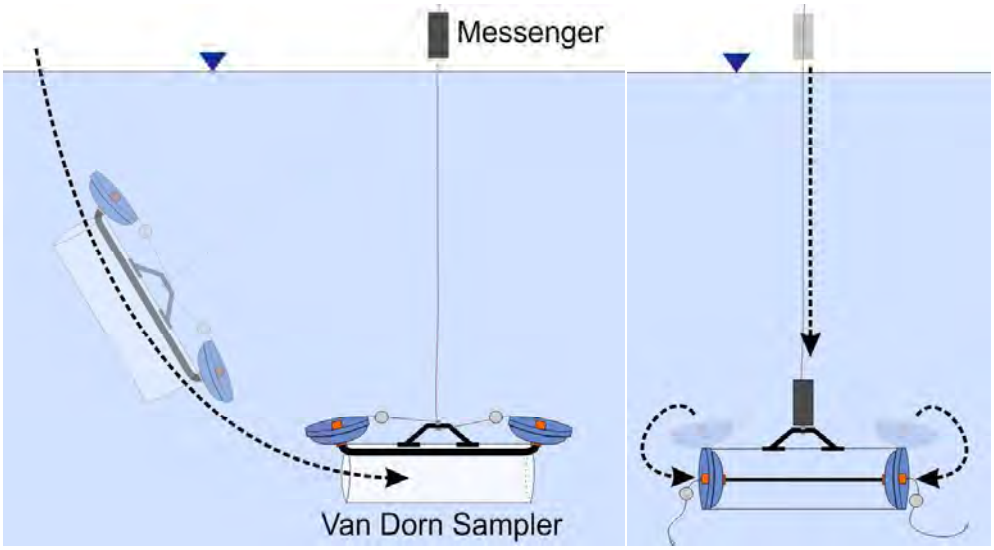

Figure 2: Surface Water Sampling using a Van Dorn Sampler

10. Decontaminate the VDS and all equipment that comes in contact with surface water between each sample location.

4.2.4 Direct Sample Collection Method

1. Ensure appropriate PPE is worn (e.g. long gloves, gum boots or waders)
2. Lower the lip of the sampling container below the surface water level upstream of body position. Unscrew sampling container under water and collect the respective samples
3. Transfer and slowly fill the respective sampling container and place cap on sample container once full (do not use a metals bottle for direct surface water sampling as the acid placed in the bottle can be displaced).
4. Place samples in a chilled esky.

4.3 Sample Quality Control and Quality Assurance:

4.3.1 Duplicates and Triplicates

A minimum of one duplicate and one triplicate sample shall be taken for every 20 primary samples collected (refer to SAP/WRF for site specific details). The duplicate and triplicate samples shall be collected as follows:

> A duplicate and triplicate sample should be collected at the same location as the primary sample at predetermined locations and/or locations where contamination is identified. Three samples from the one location aims to confirm the presence of contamination on the site and cross check the laboratory analysis program.

> Duplicates / triplicates should include blind and split samples taken immediately at the same time as the primary sample. Samples collected for duplicates, triplicates and laboratory duplicates should be filled at the same time and not one bottle at a time. Samples should be numbered to hide the identity of the primary sample.

> Three bottles are labelled (refer to naming below) and sample is evenly distributed over each jar.

> Each of the three bottles are filled to the top as quickly as possible to minimise the loss of VOCs without soils caught up in the thread and the jar cap is screwed on tight.

> The primary location where duplicate and triplicate sampling occurred is recorded on Cardno Lane Pipers QAQC record sheet.

> Additional duplicates and triplicate samples can be collected to further assess contaminated areas on the site. These samples can be placed on hold pending analysis of the primary sample.

> The duplicate sample shall be labelled QC01 or sequential numbering order for QC samples taken at that site, and shall also be entered on the F3.01 QC Sample Register and the F3.08 Surface Water Sampling Field Record, in the space provide for "Duplicate Reference".

> For large sites where multiple field crews are conducting work simultaneously a site specific QC register shall be prepared by the field or project manager so that each quality control sample is recorded correctly and uniquely (refer to site specific SAP/WRF).

Rinsates, Field Blanks and Trip Blanks.

Rinsates, Field Blanks and Trip Blanks allow for a high level of quality when sampling surface water in the field. Minimum requirements for control samples are subject to the specific requirements of the project (see SAP/WRF for site specific details) but as a minimum, they are as follows:

> **One rinsate** collected per day of a piece of equipment that is in regular contact with the samples. Eg a sample tube, the pump, a glove. A rinsate blank is used to check the effectiveness of re-useable equipment decontamination; therefore it can be undertaken at the end or close to the end of each day.

> **One rinsate** shall be collected in the sample bottles and filling them with de-ionised water supplied by the laboratory. The water is decantered over the appropriately selected piece of equipment. The bottles are filled to the top. The QA/QC sampling requirements should be taken from the WRF and SAP.

> **One field blank** is generally collected per day, but specifics depending on the sampling regime of the project (see SAP/WRF). A field blank shall be collected in the sample bottles and filled using de-ionised water supplied by the laboratory. The water is decantered into the bottles and filled to the top. A field blank is to assess the potential for contaminants in the laboratory water or in the ambient air in the vicinity of sampling to effect the results.

> **One trip blank** per esky. Trip blanks are supplied by the laboratory with the sample containers prior to the sampling event and are placed in the eskies. The trip blank is a control sample to check if that sample integrity is not lost during transit to the laboratory, particularly for the loss of volatile compounds.

> All QAQC samples discussed above are handled as follows:

- These samples are placed on ice and are should remain chilled from collection on site to delivery to the laboratory under chain of custody.
- Correctly recorded on the COC for analysis, refer to the SAP/WRF or PM for analysis requirements.
- Record the correct primary sampling and control details on a separate record sheet. F3.01 QC Sample Register

4.3.2 Equipment Decontamination

Decontamination is the process of neutralizing, washing, rinsing and removing material from exposed surfaces to minimise cross contamination of samples from sampling equipment.

As a minimum equipment such as low flow pumps, dip meters or grab samplers used to collect water samples shall be washed with biodegradable and phosphate free detergent and rinsed with tap and distilled water. Three buckets shall be set up prior to sampling to undertake this process as follows:

> Bucket 1: Filled with water and decon solution for washing and scrubbing (if required) field equipment in contact with samples

> Bucket 2: Filled with tap water to rinse equipment of detergent

> Bucket 3: Filled with distilled water to further rinse equipment of detergent

> Remove soil adhering to the sampling equipment. Then wash the equipment by scraping, brushing or wiping with a brush using water and decon bucket 1.

> Rinse thoroughly in Bucket 2 with tap water.

> Rinse thoroughly in Bucket 3 to remove detergents and dry with disposal towels.

> Repeat steps above between each bore/sampling location

4.4 Sample Handling & Preservation

Sample bottle labelling, preservation and storage shall be in accordance with Australian Standard AS2031.1 Preservation & Storage of Water Samples. Samples shall be preserved according to the requirements of testing for the analysis required, for example acid preservation, freezing etc. Appropriately pre-preserved sampling containers need to be obtained from the laboratory prior to the field mobilisation for the analytes required (as per the WRF and SAP).

4.5 CoC and Primary and Secondary Laboratories

Chain of Custody (CoC) forms are used for the purpose of certifying the integrity of samples between the time taken and when received at the laboratory. The COC is a legal document for transporting surface water samples and requesting analysis from the primary/secondary laboratory. The following sequence of actions and requirements shall be used to prepare separate COC forms F3.01 Chain of Custody for the primary and secondary laboratory when sending groundwater samples:

> At the completion of the sampling event (or day of sampling), the samples shall be removed from the Eskies and a check made that all sample bottles are present. These should then be checked against the bore location list to ensure that all locations have been sampled.

- Pack the samples bottles in the Eskys in an upright position and ensure that seals or caps are secured to prevent leakage. Pack the supplied freezer bricks evenly around the water samples. Ensure that samples are packed to prevent breakage during transport by using bubble wrap.
- The sample number, details of each container type to be placed in each Esky, location and depth of the sample, time of sampling, and details of the preservative added shall be entered onto a CoC Form.
- The address of the laboratory, phone number and contact person is completed on the COC.
- The analysis requested and which samples will be placed on HOLD. The correct laboratory codes for the analysis requested written next to the analysis requested. Specific project quote numbers or codes for specific analysis or special rates should also be included. This is information should be in the WRF and discussed with the PM on site. If this is not practical, samples on the COC can be placed on HOLD, with a supplementary COC sent within 24-48hours of the samples being sent.
- Correct names of the samples with the corresponding sample jars including all quality control samples are recorded.
- Field observations of strong odours or signs of contamination of particular samples are added on COC
- The requested turnaround times. Eg Standard (5 days), Fast tracked (3 days), Urgent (24 or 48 hrs). Turnaround times within 5 days require confirmation with the laboratory prior to the sampling.
- The names/signatures of the sampler and/or the person relinquishing the sample are added. The COC is signed by the courier picking up the samples (either from the office or in the field) is added.
- Secure the lids on the Eskies and tape the lids in place with packing tape.
- A copy of this signed COC form is kept as a record of dispatch to the laboratory and is placed inside the respective eskies in a plastic bag (such as a GLAD zip lock bag).

4.6 Field Notes & Fieldwork Requirements

- Attend a kick off meeting with the project manager or project associate
- Prepare a job safety analysis and/or HASP
- Confirm sample naming convention for the site
- Good on site practices and housekeeping (keep a tidy work area):
- Call into the PM or nominated buddy at the start and end of each day and for any expected events.
- The order of sampling locations is from up gradient/river or least contaminated location, moving closer to sample locations situated near source areas. The safety of staff and the practicality of undertaking sampling in this order takes precedence over sampling in this order (refer to SAP/WRF and discuss with PM).
- All sections of the field notes must be filled in out in the field and are legible for someone else to read and transfer electronically if required. The vehicle or site office on site can be used during periods of inclement weather.
- Refer to the waste management procedure for further guidance. As a minimum the field supervisor responsibility includes the following:
    - Safe and secure location of drums, skip bins or bulky bins to collect “waste” generated from field assessments. The location of drums should be confirmed with the PM.
    - Waste PPE, consumables such as bailers, gloves or tubing should be placed in drum on site and labelled correctly.

- All field notes should be scanned into the fieldwork folder at the conclusion of the fieldwork program.
- Data Quality Management requirements should be discussed with PM or team leader when results are received from the laboratory.

> Clean up and secure sampling location to conditions as found prior to sampling prior to leaving location.

Specific project requirements will be undertaken for transportation of samples due to varying analysis and holding times and this shall be confirmed and pre-arranged by the field supervisor with the PM prior to commencing work on the site.

F3.08 Surface Water Sampling Field Record

Site / Project:	**Page: _____ of _____**	
Client:	**Job No.:**	
Person Sampling:	**Initials:**	**Date:**

Site Details
Water Scoop / Van Dorn Sampler / Directly into bottle / Other:
Last rain event/ Recent storms/ Any unnatural releases/ Other:

Sample Details, Observations, GPS Coordinates & Field Physiochemical Measurements (if possible, record parameters once stable):				
Sample ID				
Time				
Sample Depth (m)				
Water Body Depth m				
Location On-Site/ Off-Site				
Flow Rate High/ Med./ Low				
GPS Zone (i.e. 55H)				
Easting mE				
Northing mN				
GPS Error ±m				
DO mg/L				
EC µS/Cm				
pH				
Eh mV				
Temp °C				
Water Colour				
Turbidity High/ Medium/ Low				
Observations/Notes				

Container & Preservation Data										
Container Volume										
Container Type	Plastic/ Amber/ Vial	Plastic/ Amber/ Vial	Plastic/ Amber/ Vial	Plastic/ Amber/ Vial	Plastic/ Amber/ Vial	Plastic/ Amber/ Vial	Plastic/ Amber/ Vial	Plastic/ Amber/ Vial	Plastic/ Amber/ Vial	Plastic/ Amber/ Vial
Preservation										
Sample ID (Inc. QC samples below)										

HEALTH SAFETY & ENVIRONMENT
WORK METHOD STATEMENT (HSEWMS)

WMS NO.: V160382P **REVISION#:** 01.1

PREPARED DATE: 1 May 2020

PRINCIPAL CONTRACTOR: City of Darwin	**CONTRACTOR NAME:** Cardno
PROJECT NAME: SBWMF – Ground Water Monitoring	**CARDNO ADDRESS:** 93 Mitchell St, Level 6, Darwin, NT 0820
PROJECT LOCATION: Shoal Bay Waste Management Facility	**CARDNO ABN:** 47 106 610 913

JOB DESCRIPTION: Groundwater Monitoring Event (GME)

PLANNED HIGH RISK CONSTRUCTION ACTIVITY

☐ Confined Space Entry	☐ On/Near Energised Electrical Services	☐ Excavation Entry >1.5m	☐ Explosives Use	☐ Work On/Near Gas / Chem / Fuel / Refrigerant line
☒ On/in/near traffic corridor (e.g. road, rail, shipping)	☐ Mobile Plant Movement	☐ Diving Work	☐ Work on a roof	☐ Flammable / Contaminated Atmosphere
☐ Structural Alterations	☐ Tilt Up / Precast Use (Concrete)	☐ Fall from Heights >2m	☐ Work In / Over Water	☐ Artificial Extreme Temperature
☐ Disturbance of Asbestos	☐ Telecommunications Tower	☐ Demolition Work	☒ Hazardous Substances	☐ Asbestos/Demolition License No. -

PLANT AND EQUIPMENT REQUIRED FOR THIS ACTIVITY: Wide Brimmed Hat, Sunscreen, Digital Camera, Multi Parameter Probe, Dip Meter, Hydrasleeve Samplers

PERSONNEL TRAINING & QUALIFICATIONS REQUIRED FOR THIS ACTIVITY:

MSDS Required: Yes ☐ No ☒

d

Personal Protective Equipment Required

☒ ☒ ☒ ☒ ☒ ☐ ☒ ☐ ☒

Legislative Governance: This Work Method Statement is in compliance with the Australian Work Health and Safety Act 2011, in particular with sections 17, 20, 21, 22, and the Work Health and Safety Regulations 2011, in particular sections 299, 300, 301, 302, 303. (Please Refer to Local Legislation in VIC & W.A.)
For NZ the Health and Safety in Employment Act 1992 in particular section 7 (a)(b)(c), 8, 9 (a)(b) 10 (1)(2)(3)(4)(5)(6) and Health and Safety in Employment Regulations 1995 in particular section 4 (1)(2).

WMS DEVELOPED BY:

No	Name	Position	Date
1	David James	Project Director	1 May 2021
2	Julian Brown	Environmental Scientist	1 May 2021
3			

PERMITS

☐ Confined Space Entry ☐ Hot Work
☐ Electrical ☐ Working At Heights
☐ Guards Off ☐ Excavation
☐ Diving

COPY OF SWMS SUPPLIED TO PRINCIPAL CONTRACTOR/CLIENT/CUSTOMER: APPROVAL: ☒ *(PC/Client/Customer USE ONLY BELOW)*

Name: Matthew Vitucci	**Signature:**	**Position:**	**Contact No.: 0429156860**	**Date:**

JOB DESCRIPTION:						WMS No.:V160382P		REVISION: 01.1
#	**Job Step** *Describe the job by step*	**Hazard** *What are the hazards of each step?*	**Possible Consequences** *What are the possible injury/incident consequences of each step?*	**Risk Rating** *Use the Risk Matrix to give an initial rating*	**Control Methods to be Implemented** *What control measures will be used?*	**Residual Risk Rating** *Use the Risk Matrix to give a residual risk rating*	**Responsible Person**	**Monitor & Review**
General Activities / Hazards								
1	**Transport to and from site**	Traffic and other road users	Impact with other vehicles or road users, injury/death. Damage to vehicle.	E22	• Drivers must hold a current, valid driver's license, knowledge of relevant road rules. • Driver to remain vigilant of other road users and respond to hazards appropriately and in accordance with road rules. • Trip planning – the route should be planned prior to commencing, including having a map of the planned route available. • First Aid kit to be kept in vehicle.	M12	Field staff (planning and preparation) PM/PD (training and works preparation)	Project Manager Project Director Site supervisor / field Staff
		Obstructions / unexpected diversions	Impact with obstructions, other vehicles or road users, injury/death. Damage to vehicle.	E22	• Driver to remain vigilant of road conditions and obey all road rules, including temporary road signs/warnings.	M12	Field staff (planning and preparation) PM/PD (training and works preparation)	Project Manager Project Director Site supervisor / field Staff
		Driver competence	Impact with other vehicles or road users, injury/death. Damage to vehicle.	E22	• Drivers must hold a current, valid driver's license, knowledge of relevant road rules.	M12	Field staff (planning and preparation) PM/PD (training and works preparation)	Project Manager Project Director Site supervisor / field Staff
		Driver wellness (fatigue, drug and alcohol influence, physical state)	Impact with other vehicles or road users, injury/death. Damage to vehicle.	E22	• No person is to drive if under the influence of alcohol or drugs or if they are suffering from fatigue or have a physical impairment that may affect their ability to drive safely.	M12	Field staff (planning and preparation)	Project Manager Project Director

JOB DESCRIPTION:						WMS No.:V160382P	REVISION: 01.1	
#	**Job Step** *Describe the job by step*	**Hazard** *What are the hazards of each step?*	**Possible Consequences** *What are the possible injury/incident consequences of each step?*	**Risk Rating** *Use the Risk Matrix to give an initial rating*	**Control Methods to be Implemented** *What control measures will be used?*	**Residual Risk Rating** *Use the Risk Matrix to give a residual risk rating*	**Responsible Person**	**Monitor & Review**
					• Verbal communication, in person, is to be made with Project Manager or Supervisor. • Supervisor to ensure staff are not tired and their awareness and/or judgment have not been adversely affected by work activities, weather and/or other influencing factors. • Alcohol and drug testing may be enforced. • For long journeys frequent breaks should be taken (approx. every 2 hours) – driving should be shared where possible. • Vehicle to carry minimum of 10L of water per day.		PM/PD (training and works preparation)	Site supervisor / field Staff
		Inclement weather	Impact with other vehicles or road users, injury/death. Impact with flying debris/falling trees. Damage to vehicle.	E22	• Monitor BOM website and do not travel if weather conditions are considered to present too high hazard. • If the journey is undertaken driving style should be adapted appropriately in accordance with the conditions.	M12	Field staff (planning and preparation) PM/PD (training and works preparation)	Project Manager Project Director Site supervisor / field Staff
2	**Site housekeeping**	Poor housekeeping Excessive tools, materials and equipment in the work area Obstructed walkways / roads Uneven ground / trip hazards	Slips, trips and falls. Other injury. Damage to equipment.	H17	• Complete Safety STOP (aka SLAM, Take 5) prior to assess hazards in work area • Conduct pre-site checks, clear work area of debris, excess tools and materials, litter etc. • Stack and/or store materials and equipment in approved lay down areas off the ground. • Clean and tidy area as work progresses.	M9	Site supervisor / field staff (fieldwork) PM/PD (training and preparation)	Project Manager Project Director Site supervisor / field Staff

#	Job Step *Describe the job by step*	Hazard *What are the hazards of each step?*	Possible Consequences *What are the possible injury/incident consequences of each step?*	Risk Rating *Use the Risk Matrix to give an initial rating*	Control Methods to be Implemented *What control measures will be used?*	Residual Risk Rating *Use the Risk Matrix to give a residual risk rating*	Responsible Person	Monitor & Review
					• Ensure all open penetrations are barricaded /signposted prior to leaving the work area. • Remove all excess waste after each task and place in receptacles provided, follow posted waste segregation signage.			
3	**Manual handling**	Heavy lifts / dropped objects	Injury from heavy lifts / dropped objects, damage to muscles and soft tissue, bruises, scrapes.	H14	• No single person unaided lift of objects > 25 kg. • Mechanical lifting/transport aid where possible. • Two man lift if safe to do so for heavy/awkward objects (25kg or more) where mechanical lift is not practical. • Appropriate gloves to be worn for all tasks. • Manual handling training to be provided (i.e. “safe spine, bend knees not back”). • Conduct stretch and flex exercises after pre-starts, and after breaks if necessary.	M6	Site supervisor / field staff (fieldwork) PM/PD (training and preparation)	Project Manager Project Director Site supervisor / field Staff
4	**Workforce skills**	Unskilled workers Insufficient training Level of job knowledge	Injury caused by inappropriate use of tools or equipment, or by not adhering to site rules / task rules and procedures	H19	• Stop work authority in place. • Tool box talk to be undertaken prior to the works commencing and at the start of each day. • Mandatory PPE to be worn at all times. • Daily equipment pre-start inspections. • Ensure that all stakeholders are informed of works. • During the period of the project, staff that either change position or join the project must be assessed against the project training needs	M12	Site Supervisor / field staff (assessment of contractors) PM/PD (training and preparation)	Project Manager Project Director Site supervisor / field Staff

#	Job Step *Describe the job by step*	Hazard *What are the hazards of each step?*	Possible Consequences *What are the possible injury/incident consequences of each step?*	Risk Rating *Use the Risk Matrix to give an initial rating*	Control Methods to be Implemented *What control measures will be used?*	Residual Risk Rating *Use the Risk Matrix to give a residual risk rating*	Responsible Person	Monitor & Review
					to ensure all specific H&S training needs are met. • Ensure compliance with requirements identified by the SWMS.			
5	**Monitoring of tasks and procedures**	Ineffective control measures implemented and/or not being used properly	Injury, incident, damage to equipment	H14	• Obtain Work Permit(s) from Central Control Room prior to commencement of tasks. • Obtain gas pre-clearance and hot works permit prior to undertaking works in ammonia plant area. (Incl. continues monitoring). • PLAN - DO – CHECK – ACT. • Stop work immediately if any additional hazards have been identified and review SWMS. • Advise each person affected by any amendment to the SWMS and the details of the amendment, have safety review and sign. • Consult with supervisors and workers, regarding any ineffective control measures, stop work until corrected. • Daily work place inspections.	M9	Site supervisor / field staff (monitoring of procedures) PM/PD (training and preparation)	Project Manager Project Director Site supervisor / field Staff
6	**Environmental**	Ultraviolet light	Sunburn, sunstroke, long-term UV effects	E24	• Avoid sun exposure wherever possible. • Apply a broad spectrum sun screen =>30+ every 2hrs. • Take shaded rest breaks. • Wear a hard hat brim. • Long sleeves to be rolled down and buttoned.	M8	Field staff (planning and preparation) PM/PD (training, PPE and works preparation)	Project Manager Project Director Site supervisor / field Staff

JOB DESCRIPTION:						WMS No.:V160382P	REVISION: 01.1	
#	**Job Step** *Describe the job by step*	**Hazard** *What are the hazards of each step?*	**Possible Consequences** *What are the possible injury/incident consequences of each step?*	**Risk Rating** *Use the Risk Matrix to give an initial rating*	**Control Methods to be Implemented** *What control measures will be used?*	**Residual Risk Rating** *Use the Risk Matrix to give a residual risk rating*	**Responsible Person**	**Monitor & Review**
		Excessive temperatures	Dehydration	E24	• Drink plenty of water and take regular meal breaks. • Work in shaded areas where possible. • Air condition containers, cabins and/or site vehicles. • Regular rest breaks in cooler shaded areas. • Supervisor to monitor work crew and look after your mates. • Store chemicals out of direct sunlight, in proper cabinets where required. • Ensure adequate potable drinking water is available. • Implement the Cardno Heat Stress Protocol (see attached).	M8	Field staff (planning and preparation) PM/PD (training and works preparation)	Project Manager Project Director Site supervisor / field Staff
		Environmental incident: 1. Disturbance of flora and fauna. 2. Spillages. 3. Air quality. 4. Interaction with snakes, spiders and other fauna.	Environmental incident, damage to the environment, personal injury	H18	• Regular inspections & maintenance to be carried out on tools, plant and equipment. • Avoid interaction with fauna – Stop Work Authority, contact supervisor/project manager, monitor risk/hazard if safe to do so. • Trained first aiders on work site. • Personnel to be familiar with emergency response procedures, hold toolbox meeting with crew. • Environmental incidents to be reported to appropriate persons where required. (in the event of incident CSPB has in house emergency response team, call 84118444)	9M	Field staff (planning and preparation) PM/PD (training and works preparation)	Project Manager Project Director Site supervisor / field Staff
		Contaminated waste / water	Contamination of “clean” soil/water	H14	• Water to be placed into appropriate containers for temporary storage prior to classification and appropriate transport/disposal.	M6	Field staff (planning and preparation)	Project Manager Project Director

JOB DESCRIPTION:						WMS No.:V160382P	REVISION: 01.1	
#	**Job Step** *Describe the job by step*	**Hazard** *What are the hazards of each step?*	**Possible Consequences** *What are the possible injury/incident consequences of each step?*	**Risk Rating** *Use the Risk Matrix to give an initial rating*	**Control Methods to be Implemented** *What control measures will be used?*	**Residual Risk Rating** *Use the Risk Matrix to give a residual risk rating*	**Responsible Person**	**Monitor & Review**
					• Storage containers should be securely closed, clearly labelled, and positioned such that they are unlikely to be disturbed by other site activities. • Site supervisor and/or client to be informed of their location and content.		PM/PD (training and works preparation)	Site supervisor / field Staff
		Inclement weather	Injury, environmental incident	H19	• Monitor BOM website pre-mobilization and advise work crew of any potential hazards/restrictions/control methods. • Stop Work Authority in place.	M9	Field staff (planning and preparation) PM/PD (training and works preparation)	Project Manager Project Director Site supervisor / field Staff
7	**Use of PPE**	PPE not suitable/inadequate for tasks being undertaken	Injury (slip, trip, fall, dropped objects, cuts, impact, traps)	E22	• Check PPE prior to works. • Ensure PPE is serviceable and correctly fitted. • Ensure clothing is fitted correctly (loose clothing has the potential to be drawn into the moving parts of machinery). • Shirts must be buttoned to at least the 3rd button from the top of the shirt • Sleeves must be rolled down and buttoned.	M9	Field staff (planning and preparation) PM/PD (training, PPE and works preparation)	Project Manager Project Director Site supervisor / field Staff
8	**Noise**	Excessive noise	Impaired hearing	H18	• Follow mandatory safety signage and use appropriate hearing protection as required by site requirements. • Where exposure to excessive noise cannot be avoided personnel will wear appropriate hearing protection.	M9	Field staff (planning and preparation) PM/PD (training, PPE and works preparation)	Project Manager Project Director Site supervisor / field Staff

JOB DESCRIPTION:						WMS No.:V160382P	REVISION: 01.1	
#	**Job Step** *Describe the job by step*	**Hazard** *What are the hazards of each step?*	**Possible Consequences** *What are the possible injury/incident consequences of each step?*	**Risk Rating** *Use the Risk Matrix to give an initial rating*	**Control Methods to be Implemented** *What control measures will be used?*	**Residual Risk Rating** *Use the Risk Matrix to give a residual risk rating*	**Responsible Person**	**Monitor & Review**
• **Job Step Activities / Hazards**								
A	**Traversing the site by foot**	Slopes, uneven ground, wet ground	Injury from slips, trips and falls.	H17	• Obtain Work Permit(s) from Central Control Room prior to commencement of tasks • Obtain gas pre-clearance and hot works permit prior to undertaking works in ammonia plant area. (Incl. continues monitoring). • Personnel should plan route across the site, keeping to pedestrian tracks/pathways where possible. • Personnel should be aware of the environment that is around them and ensure that solid footing is kept at all times. • PPE including steel capped boots should be worn to prevent injury in the event of a trip, slip or fall.	M9	Field staff (planning and preparation) PM/PD (training and works preparation)	Project Manager Project Director Site supervisor / field Staff
B	**Driving light vehicle across site**	Site traffic and other site users. Members of the public / trespassers. Fatigue. Soft or uneven ground, or obstructions.	Incident, injury, damage to vehicle or infrastructure	E22	• Obtain Work Permit(s) from Central Control Room prior to commencement of tasks • Obtain gas pre-clearance and hot works permit prior to undertaking works in ammonia plant area. (incl. continues monitoring) • Drivers must hold a current, valid driver's license, knowledge of relevant site/road rules. • Hazard lights to be used. • Speed to be kept to < 15 kph unless other site speed limits apply.	M10	Field staff (planning and preparation) PM/PD (training and works preparation)	Project Manager Project Director Site supervisor / field Staff

JOB DESCRIPTION:						WMS No.:V160382P	REVISION: 01.1	
#	**Job Step** *Describe the job by step*	**Hazard** *What are the hazards of each step?*	**Possible Consequences** *What are the possible injury/incident consequences of each step?*	**Risk Rating** *Use the Risk Matrix to give an initial rating*	**Control Methods to be Implemented** *What control measures will be used?*	**Residual Risk Rating** *Use the Risk Matrix to give a residual risk rating*	**Responsible Person**	**Monitor & Review**
					• The route should be planned, keeping to vehicle tracks where possible, and avoiding areas of soft or uneven ground to avoid bogging or tipping. • No person is to drive if under the influence of alcohol or drugs or if they are suffering from fatigue or have a physical impairment that may affect their ability to drive safely. • Verbal communication, in person, is to be made with Project Manager or Supervisor. • Supervisor to ensure staff are not tired and their awareness and/or judgment have not been adversely affected by work activities, weather and/or other influencing factors. • Alcohol and drug testing may be enforced.			
C	**Changing Tyre**	Raised Vehicle, Muscular stress, falling objects, damage to equipment	Injury, incident, damage to vehicle.	E22	• Isolate vehicle • Ensure vehicle is in gear, with handbrake on, wheels choked. • Ensure Jack is stable and at correct jacking point (see vehicle manual). • Do not over exert, causing muscle strain. • Use correct lifting and manual handling techniques, eg. Bend knees with straight back. Roll tyre where possible. • Keep everything clear from beneath vehicle when jack in use.	M10	Field staff (planning and preparation) PM/PD (training and works preparation)	Project Manager Project Director Site supervisor / field Staff

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					• Insert spare wheel under axel, to provide extra support when vehicle is jacked. • Re-check wheel-nut tightness.			
G	**Groundwater development / monitoring / sampling**	Liquid spray. Exposure to contaminated groundwater.	Injury, exposure to hazardous chemicals	H17	• Personnel will be required to wear PPE appropriate to the conditions at the site in order to avoid contact with chemicals that may be present in the groundwater at the site (i.e. safety glasses, nitrile gloves etc.	M9	Field staff (planning and preparation) PM/PD (training and works preparation)	Project Manager Project Director Site supervisor / field Staff
D	**Survey Bore headworks / TOC / Ground level**	Exposure to contaminated groundwater. Explosive atmosphere Fauna / Flora Interaction	Injury, incident, damage to vehicle or infrastructure, exposure to hazardous chemicals	E22	• Obtain Work Permit(s) from Central Control Room prior to commencement of tasks • Obtain gas pre-clearance and hot works permit prior to undertaking works in ammonia plant area. (incl. continues monitoring) • Personnel will be required to wear PPE appropriate to the conditions at the site in order to avoid contact with chemicals that may be present in the groundwater at the site (i.e. safety glasses, nitrile gloves etc. • Follow mandatory safety signage and use appropriate hearing protection as required by site requirements. • Avoid interaction with fauna – Stop Work Authority, contact supervisor/project manager,	M12	Field staff (planning and preparation) PM/PD (training and works preparation)	Project Manager Project Director Site supervisor / field Staff

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#	**Job Step** *Describe the job by step*	**Hazard** *What are the hazards of each step?*	**Possible Consequences** *What are the possible injury/incident consequences of each step?*	**Risk Rating** *Use the Risk Matrix to give an initial rating*	**Control Methods to be Implemented** *What control measures will be used?*	**Residual Risk Rating** *Use the Risk Matrix to give a residual risk rating*	**Responsible Person**	**Monitor & Review**
					monitor risk/hazard if safe to do so.			
G	**Groundwater Water Level monitoring**	Liquid spray. Exposure to contaminated groundwater.	Injury, exposure to hazardous chemicals	H17	• Personnel will be required to wear PPE appropriate to the conditions at the site in order to avoid contact with chemicals that may be present in the groundwater at the site (i.e. safety glasses, nitrile gloves etc.	M9	Field staff (planning and preparation) PM/PD (training and works preparation)	Project Manager Project Director Site supervisor / field Staff

Sign-Off Sheet

All persons performing any activity covered by this WMS MUST sign off prior to commencement of this task as recognition of having read and understood the work steps and preventative actions required to reduce the risk of harm, and ensure safe work practices are maintained.
I, the undersigned declare that I have read and understand the requirements of this WMS and will work in accordance with the prescribed controls.

Name	*Signature*	*Position*	*Date*	*Name*	*Signature*	*Position*	*Date*
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LIKELIHOOD OR FREQUENCY (How much chance is there of It happening)	CONSEQUENCE SEVERITY				
	1 INSIGNIFICANT	2 MINOR	3 MODERATE	4 MAJOR	5 CATASTROHPIC
A – Almost Certain	Moderate 11	High 16	Extreme 20	Extreme 23	Extreme 25
B - Likely	Moderate 7	High 13	High 17	Extreme 21	Extreme 24
C - Possible	Moderate 5	Moderate 8	High 14	High 18	Extreme 22
D - Unlikely	Low 2	Low 4	Moderate 9	High 15	High 19
E - Rare	Low 1	Low 3	Moderate 6	Moderate 10	Moderate 12

E = Extreme Risk	Immediate action required to implement better controls. Activity must not start or be stopped if started. Senior Management to give approval for work to commence or continue.
H = High Risk	Immediate manager to give approval for work to commence or continue. More suitable controls to be investigated.
M = Moderate Risk	Work to proceed once risk is reduced to as low as reasonably practicable and controls are implemented.
L = Low Risk	Work to proceed while monitoring and managing risk.

QUALITATIVE MEASURES OF IMPACT – CONSEQUENCE

LEVEL	IMPACT	EXAMPLE OF CONSEQUENCE
1	Insignificant	No injuries; no environmental impact.
2	Minor	First Aid; environmental release immediately contained.
3	Moderate	Medical Treatment; environmental release not immediately contained with no detrimental effects.
4	Major	Lost Time Injury/Illness; environmental release not immediately contained with toxic effects.
5	Catastrophic	Fatality; release to the environment with long term/permanent toxic effects.

QUALITATIVE MEASURES OF LIKELIHOOD

LEVEL	MEASURE	DESCRIPTION	GUIDE
A	Almost Certain	The event is expected to occur in most circumstances	Once or several times a day
B	Likely	Will probably occur in most circumstances	Once per week
C	Possible	Might occur at some time	Once per month
D	Unlikely	Could occur at some time	Once per year
E	Rare	May occur only in exceptional circumstances	May occur once per ten years

Step 1

Determine the **consequence** : What do you perceive as the likely outcome or loss if the hazard were not managed appropriately? To assist with this component, you may wish to consult with others from the area or activity and review previous safety performance data.

Step 2

Determine the **likelihood** : How likely do you perceive an incident would result if the hazard were not managed appropriately? To assist with this component, you may wish to consult with others from the area or activity and review previous safety performance data.

Step 3

Determine the **risk rating** : Match up your consequence rating and likelihood rating. You should end up with either a low, moderate, high or extreme risk rating.

Hazard Control Prompts

most effective

Elimination	Can we get rid of it altogether? e.g. doing the at ground level rather than at height eliminates falls from height risk.
Substitution	Can we find a process / substance etc less hazardous? e.g. use of less toxic solvents.
Isolation	Can we put something between the hazard and people? e.g. install guarding and handrails.
Administrative	What can we tell, show people about safety? e.g. training, safe work procedures.
PPE	What can people wear that will reduce either the probability or the consequence of something happening?

least effective

Hazard Prompts

General:	• Struck by • Strike against • Caught in / between • Slips, trips • Falls on same level • Falls from height • Manual Handling • Visibility • People/pedestrians
Energy Source: (Contact with)	• Electricity • Mechanical • Pressure • Chemical • Other
Exposure to:	• Dust • Noise • Fumes • Heat • UV • Wet conditions • Animals