PHYTOPLANKTON ANALYSIS REPORT

Report no: 282367
Supercedes Report No:

Depth : N/A
Chlorophyll a: NA
Microcystin equivalents: NA
Date analysed: 6/04/2023

Lims No: L23028874
Date Sampled: 3/04/2023
Analyst: [redacted]

Client ID: 232125
Address: [redacted]
Site:

Client: Department of Planning and Environment

Method: MA70CENTI

Issued By : Sydney Water Laboratory Services
Issued On : 06/04/2023

Disclaimer: Samples analysed as received.

TAXA

	Cells/ mL	Significance	ASU/ mL	Biovolum mm3/L
Cyanophyta (Blue green)				
Anabaenopsis	416	Potentially toxic	28.70	0.049
Anagnostidinema	1457		44.00	0.025
Coccoid Blue Green Picoplankton	2346787	Filter clogging?	4,458.89	1.059
Merismopedia	4425		4.42	0.037
Microcystis	27377	Potentially toxic, taste & odour	769.29	0.761
Planktolyngbya	29497	Filter clogging	294.97	2.359
Pseudanabaena	30456		243.64	0.304
Spirulina	1475		22.12	0.005
Subtotal	2441890		5,866.03	4.599
Chrysophyta (Golden brown)				
Dichotomococcus	9587		119.83	0.080
Subtotal	9587		119.83	0.080
Bacillariophyta (Diatom)				
Aulacoseira	1124	Filter clogging	457.46	0.675
Cyclotella	4425	Filter clogging	300.90	0.345
Cyclotella/Stephanodiscus	2212	Filter clogging	118.34	0.175
Nitzschia	1374		296.78	0.138
Skeletonema	2950	Filter clogging	2,212.50	0.194
Synedra	69		40.98	0.037
Urosolenia	737	Filter clogging	519.58	0.683
Subtotal	12891		3,946.54	2.247
Chlorophyta (Green)				
Ankistrodesmus	1475		554.60	0.199

PHYTOPLANKTON ANALYSIS REPORT

Report no: 282367 *Depth :* N/A

Supercedes Report No: *Chlorophyll a:* NA

Microcystin equivalents: NA

Date analysed: 6/04/2023

Lims No: L23028874 *Date Sampled:* 3/04/2023 *Analyst:* [redacted]

Client ID: 232125 *Address:* [redacted]

Site:

Client: **Department of Planning and Environment**

Method: **MA70CENTI**

Issued By : Sydney Water Laboratory Services
Issued On : 06/04/2023

Disclaimer: Samples analysed as received.

TAXA

	Cells/ mL	Significance	ASU/ mL	Biovolum mm3/L
Crucigenia	737		5.89	0.014
Kirchneriella	1475		73.75	0.028
Monoraphidium cf	3687		98.81	0.072
Scenedesmus species 1	5162		402.63	0.283
Staurastrum	69		365.07	0.143
Tetraedron	2212		940.10	0.221
Subtotal	14817		2,440.85	0.960

	Cells/ mL	ASU/ mL	Biovolume mm3/L
Total Blue Green	2442000	5866.00	4.600
*** Potentially Toxic Blue Green**	27790	798.00	0.810
*** Potentially Toxic Algae**	27790	798.00	0.810
Total Algae	2479000	12370.00	7.890

Comment:

Debris present in the sample.

*Taxa with potential to produce toxins.
ASU : One ASU (Area Standard Unit) equals 400µm² of algal cells (as cross sectional area)
Biovolume : Biovolume is calculated from cell linear dimensions. Guidelines based on Biovolume.
Coccoid Blue Green Picoplankton: *Aphanocapsa; Aphanothece; Cyanogranis; Cyanonephron; Cyanocatena; Gloeocapsa; Gloeothece ; Cyanodictyon*

Phycology

Sydney Water Approved Signatory:

[redacted], Analysis

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Uncertainty estimates are available for all accredited test results.

Accreditation No.: 610 Biological testing
Accredited for compliance with ISO/IEC 17025

PHYTOPLANKTON ANALYSIS REPORT

Report no: 282367
Supercedes Report No:

Depth : N/A
Chlorophyll a: NA
Microcystin equivalents: NA
Date analysed: 6/04/2023

Lims No: L23028875
Date Sampled: 3/04/2023
Analyst: [redacted]

Client ID: 232128
Address: [redacted]
Site:

Client: Department of Planning and Environment

Method: MA70CENTI

Issued By : Sydney Water Laboratory Services
Issued On : 06/04/2023

Disclaimer: Samples analysed as received.

TAXA

	Cells/ mL	Significance	ASU/ mL	Biovolum mm3/L
Cyanophyta (Blue green)				
Anabaenopsis	1110	Potentially toxic	76.59	0.131
Aphanizomenonaceae	330	Potentially toxic, taste & odour	22.11	0.034
Coccoid Blue Green Picoplankton	749520	Filter clogging?	1,424.08	0.338
Cuspidothrix issatschenkoi	572		29.17	0.031
Merismopedia	8849		8.84	0.074
Microcystis	31414	Potentially toxic, taste & odour	882.73	0.873
Planktolyngbya	69023	Filter clogging	690.23	5.521
Pseudanabaena	35341		282.72	0.353
Raphidiopsis raciborskii	486	Potentially toxic, taste & odour	18.37	0.014
Sphaerospermopsis reniformis	6605	Taste & Odour	264.86	0.306
Subtotal	903250		3,699.70	7.675
Chrysophyta (Golden brown)				
Chrysochromulina	553	potentially ichthyotoxic - (?) toxic to fish	16.14	0.014
Subtotal	553		16.14	0.014
Bacillariophyta (Diatom)				
Aulacoseira	2553	Filter clogging	1,039.07	1.534
Cyclotella	6637	Filter clogging	451.31	0.517
Cyclotella/Stephanodiscus	1106	Filter clogging	59.17	0.087
Synedra	139		82.56	0.076
Subtotal	10435		1,632.11	2.214
Euglenophyta (Euglenoid)				
Euglena	1106	Discolouration of water	1,955.40	2.558
Trachelomonas	69	Common after flood	193.61	0.156

PHYTOPLANKTON ANALYSIS REPORT

Report no: 282367

Supercedes Report No:

Depth : N/A

Chlorophyll a: NA

Microcystin equivalents: NA

Date analysed: 6/04/2023

Lims No: L23028875

Date Sampled: 3/04/2023

Analyst: [redacted]

Client ID: 232128

Address: [redacted]

Site:

Client: Department of Planning and Environment

Method: MA70CENTI

Issued By : Sydney Water Laboratory Services

Issued On : 06/04/2023

Disclaimer: Samples analysed as received.

TAXA

	Cells/ mL	Significance	ASU/ mL	Biovolum mm3/L
Subtotal	1175		2,149.01	2.714
Chlorophyta (Green)				
Chlamydomonas	2212	Taste & Odour	176.96	0.188
Chlorogonium	553		181.66	0.345
Crucigenia	6637		53.09	0.126
Dictyosphaerium	11117		800.42	0.166
Kirchneriella	2212		110.60	0.042
Koliella	1106	Filter clogging	16.59	0.001
Monoraphidium cf	6637		177.87	0.129
Pediastrum	555		66.60	0.026
Planctonema	971		80.59	0.109
Scenedesmus species 1	25552		1,993.05	1.401
Sphaerocystis	553		62.48	0.016
Tetraedron	1106		470.05	0.110
Subtotal	59211		4,189.96	2.659
Cryptophyta (Monad)				
Chroomonas	1106	Common after flood	265.44	0.274
Subtotal	1106		265.44	0.274

	Cells/ mL	ASU/ mL	Biovolume mm3/L
Total Blue Green	**903300**	**3700.00**	**7.680**
*** Potentially Toxic Blue Green**	**33340**	**999.80**	**1.050**
*** Potentially Toxic Algae**	**33890**	**1016.00**	**1.070**
Total Algae	**975700**	**11950.00**	**15.550**

Comment:

Debris present in the sample.

*Taxa with potential to produce toxins.
ASU : One ASU (Area Standard Unit) equals 400µm² of algal cells (as cross sectional area)
Biovolume : Biovolume is calculated from cell linear dimensions. Guidelines based on Biovolume.
Coccoid Blue Green Picoplankton: *Aphanocapsa; Aphanothece; Cyanogranis; Cyanonephron; Cyanocatena; Gloeocapsa; Gloeothece ; Cyanodictyon*

Phycology

Sydney Water Approved Signatory:

[redacted], Analysis

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Accreditation No.: 610 Biological testing
Accredited for compliance with ISO/IEC 17025

PHYTOPLANKTON ANALYSIS REPORT

Report no: 282367
Supercedes Report No:

Depth : N/A
Chlorophyll a: NA
Microcystin equivalents: NA
Date analysed: 6/04/2023

Lims No: L23028876
Date Sampled: 3/04/2023
Analyst: [redacted]

Client ID: 232131
Address: [redacted]
Site:

Client: Department of Planning and Environment

Method: MA70CENTI

Issued By : Sydney Water Laboratory Services
Issued On : 06/04/2023

Disclaimer: Samples analysed as received.

TAXA

	Cells/ mL	Significance	ASU/ mL	Biovolum mm3/L
Cyanophyta (Blue green)				
Anabaenopsis	399	Potentially toxic	27.53	0.047
Anagnostidinema	642		19.38	0.011
Aphanizomenonaceae	222	Potentially toxic, taste & odour	14.87	0.023
Coccoid Blue Green Picoplankton	150712	Filter clogging?	286.35	0.068
Cuspidothrix issatschenkoi	278		14.17	0.015
Merismopedia	11614		11.61	0.097
Microcystis	6015	Potentially toxic, taste & odour	169.02	0.167
Myxobaktron	1770		31.15	0.008
Non toxic Aphanizomenonaceae	1218	Taste & Odour	49.93	0.054
Planktolyngbya	6913	Filter clogging	69.13	0.553
Pseudanabaena	3391		27.12	0.033
Raphidiopsis raciborskii	312	Potentially toxic, taste & odour	11.79	0.009
Sphaerospermopsis reniformis	2794	Taste & Odour	112.03	0.129
Spirulina	1106		16.59	0.004
Subtotal	187386		860.67	1.218
Chrysophyta (Golden brown)				
Dichotomococcus	2738		34.22	0.023
Subtotal	2738		34.22	0.023
Bacillariophyta (Diatom)				
Aulacoseira	753	Filter clogging	306.47	0.452
Cyclotella	8573	Filter clogging	582.96	0.668
Cyclotella species 4	121	Filter clogging	188.89	1.704
Cyclotella/Stephanodiscus	1065	Filter clogging	56.97	0.084
Nitzschia	293		63.28	0.029

PHYTOPLANKTON ANALYSIS REPORT

Report no: 282367
Supercedes Report No:

Depth : N/A
Chlorophyll a: NA
Microcystin equivalents: NA
Date analysed: 6/04/2023

Lims No: L23028876
Date Sampled: 3/04/2023
Analyst: Subha Reddy

Client ID: 232131
Address: [redacted]
Site:

Client: Department of Planning and Environment

Method: MA70CENTI

Issued By : Sydney Water Laboratory Services
Issued On : 06/04/2023

Disclaimer: Samples analysed as received.

TAXA

	Cells/ mL	Significance	ASU/ mL	Biovolum mm3/L
Skeletonema	2738	Filter clogging	2,053.50	0.180
Synedra	121		71.87	0.066
Subtotal	13664		3,323.94	3.183
Euglenophyta (Euglenoid)				
Euglena	243	Discolouration of water	429.62	0.562
Phacus	17		107.74	0.059
Strombomonas	52		41.86	0.010
Trachelomonas	52	Common after flood	145.91	0.117
Subtotal	364		725.13	0.748
Chlorophyta (Green)				
Ankistrodesmus	968		363.96	0.130
Chlamydomonas	553	Taste & Odour	44.24	0.047
Coelastrum	1659		54.74	0.112
Crucigenia	1120		8.96	0.021
Dictyosphaerium	8987		647.06	0.134
Kirchneriella	2102		105.10	0.039
Koliella	553	Filter clogging	8.29	0.000
Lagerheimia	553		106.72	0.133
Micractinium	553		7.18	0.008
Monoraphidium arcuatum	17		4.61	0.003
Monoraphidium cf	1659		44.46	0.032
Oocystis	1106		105.07	0.112
Pediastrum	468		56.16	0.021
Planctonema	173		14.35	0.019
Scenedesmus species 1	14518		1,132.40	0.796
Schroederia	138		28.01	0.018

PHYTOPLANKTON ANALYSIS REPORT

Report no: 282367 | *Depth :* N/A
Supercedes Report No: | *Chlorophyll a:* NA
Microcystin equivalents: NA
Date analysed: 6/04/2023

Lims No: L23028876 | *Date Sampled:* 3/04/2023 | *Analyst:* [redacted]

Client ID: 232131 | *Address:* [redacted]
Site:

Client: **Department of Planning and Environment**

Method: **MA70CENTI**

Issued By : Sydney Water Laboratory Services
Issued On : 06/04/2023

Disclaimer: Samples analysed as received.

TAXA

	Cells/ mL	Significance	ASU/ mL	Biovolum mm3/L
Spermatozopsis	138		2.62	0.005
Staurastrum	17		89.94	0.035
Tetraedron	1106		470.05	0.110
Tetrastrum	1106		151.52	0.190
Subtotal	37494		3,445.44	1.965
Cryptophyta (Monad)				
Chroomonas	2765	Common after flood	663.60	0.685
Cryptomonas	277	Common after flood, Taste & Odour	149.58	0.263
Subtotal	3042		813.18	0.948

	Cells/ mL	ASU/ mL	Biovolume mm3/L
Total Blue Green	187400	860.70	1.220
*** Potentially Toxic Blue Green**	6950	223.20	0.246
*** Potentially Toxic Algae**	6950	223.20	0.246
Total Algae	244700	9203.00	8.090

Comment:
Debris present in the sample.

*Taxa with potential to produce toxins.
ASU : One ASU (Area Standard Unit) equals 400µm² of algal cells (as cross sectional area)
Biovolume : Biovolume is calculated from cell linear dimensions. Guidelines based on Biovolume.
Coccoid Blue Green Picoplankton: *Aphanocapsa; Aphanothece; Cyanogranis; Cyanonephron; Cyanocatena; Gloeocapsa; Gloeothece ; Cyanodictyon*

Phycology

Sydney Water Approved Signatory:

[redacted], Analysis

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Accreditation No.: 610 Biological testing
Accredited for compliance with ISO/IEC 17025

PHYTOPLANKTON ANALYSIS REPORT

Report no: 282367
Supercedes Report No:

Depth : N/A
Chlorophyll a: NA
Microcystin equivalents: NA
Date analysed: 6/04/2023

Lims No: L23028877
Date Sampled: 3/04/2023
Analyst: [redacted]

Client ID: 232134
Address: [redacted]
Site:

Client: Department of Planning and Environment

Method: MA70CENTI

Issued By : Sydney Water Laboratory Services
Issued On : 06/04/2023

Disclaimer: Samples analysed as received.

TAXA

	Cells/ mL	Significance	ASU/ mL	Biovolum mm3/L
Cyanophyta (Blue green)				
Anabaenopsis	588	Potentially toxic	40.57	0.069
Coccoid Blue Green Picoplankton	634393	Filter clogging?	1,205.34	0.286
Dolichospermum affine	364		14.81	0.016
Merismopedia	28317		28.31	0.238
Microcystis	5081	Potentially toxic, taste & odour	142.77	0.141
Planktolyngbya	20795	Filter clogging	207.95	1.663
Pseudanabaena	6119		48.95	0.061
Raphidiopsis raciborskii	2151	Potentially toxic, taste & odour	81.30	0.063
Sphaerospermopsis reniformis	624	Taste & Odour	25.02	0.028
Synechococcus cf	2257		27.76	0.015
Subtotal	700689		1,822.78	2.580
Bacillariophyta (Diatom)				
Aulacoseira	278	Filter clogging	113.14	0.167
Cyclotella	2212	Filter clogging	150.41	0.172
Cyclotella/Stephanodiscus	442	Filter clogging	23.64	0.035
Subtotal	2932		287.19	0.374
Chlorophyta (Green)				
Ankistrodesmus	442		166.19	0.059
Chlamydomonas	1770	Taste & Odour	141.60	0.150
Crucigenia	2655		21.24	0.050
Dictyosphaerium	12389		892.00	0.185
Kirchneriella	885		44.25	0.016
Koliella	442	Filter clogging	6.63	0.000
Monoraphidium arcuatum	69		18.72	0.014

PHYTOPLANKTON ANALYSIS REPORT

Report no: 282367
Supercedes Report No:

Depth : N/A
Chlorophyll a: NA
Microcystin equivalents: NA
Date analysed: 6/04/2023

Lims No: L23028877
Date Sampled: 3/04/2023
Analyst: [redacted]

Client ID: 232134
Address: [redacted]
Site:

Client: Department of Planning and Environment

Method: MA70CENTI

Issued By : Sydney Water Laboratory Services
Issued On : 06/04/2023

Disclaimer: Samples analysed as received.

TAXA

	Cells/ mL	Significance	ASU/ mL	Biovolum mm3/L
Monoraphidium cf	4867		130.43	0.095
Oocystis	1327		126.06	0.135
Pediastrum	555		66.60	0.026
Planctonema	1526		126.65	0.172
Scenedesmus species 1	10707		835.14	0.587
Staurastrum	442		2,338.62	0.916
Tetraedron	1327		563.97	0.132
Tetrastrum	1770		242.49	0.304
Treubaria	442		27.84	0.036
Subtotal	41615		5,748.43	2.877
Cryptophyta (Monad)				
Chroomonas	1327	Common after flood	318.48	0.329
Cryptomonas	885	Common after flood, Taste & Odour	477.90	0.840
Subtotal	2212		796.38	1.169

	Cells/ mL	ASU/ mL	Biovolume mm3/L
Total Blue Green	700700	1823.00	2.580
*** Potentially Toxic Blue Green**	7820	264.60	0.273
*** Potentially Toxic Algae**	7820	264.60	0.273
Total Algae	747400	8655.00	7.000

Comment:
Debris present in the sample.

*Taxa with potential to produce toxins.
ASU : One ASU (Area Standard Unit) equals 400µm² of algal cells (as cross sectional area)
Biovolume : Biovolume is calculated from cell linear dimensions. Guidelines based on Biovolume.
Coccoid Blue Green Picoplankton: *Aphanocapsa; Aphanothece; Cyanogranis; Cyanonephron; Cyanocatena; Gloeocapsa; Gloeothece ; Cyanodictyon*

Phycology

Sydney Water Approved Signatory:

[redacted], Analysis

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Accreditation No.: 610 Biological testing
Accredited for compliance with ISO/IEC 17025

PHYTOPLANKTON ANALYSIS REPORT

Report no: 282367
Supercedes Report No:

Depth : N/A
Chlorophyll a: NA
Microcystin equivalents: NA
Date analysed: 6/04/2023

Lims No: L23028878
Date Sampled: 3/04/2023
Analyst: [redacted]

Client ID: 232137
Address: [redacted]
Site:

Client: Department of Planning and Environment

Method: MA70CENTI

Issued By : Sydney Water Laboratory Services
Issued On : 06/04/2023

Disclaimer: Samples analysed as received.

TAXA

	Cells/ mL	Significance	ASU/ mL	Biovolum mm3/L
Cyanophyta (Blue green)				
Anabaenopsis	104	Potentially toxic	7.17	0.012
Coccoid Blue Green Picoplankton	383572	Filter clogging?	728.78	0.173
Dolichospermum affine	833		33.90	0.038
Limnothrix	8464		84.64	0.106
Merismopedia	5899		5.89	0.049
Microcystis	1078	Potentially toxic, taste & odour	30.29	0.029
Pseudanabaena	1145		9.16	0.011
Raphidiopsis raciborskii	661	Potentially toxic, taste & odour	24.98	0.019
Spirulina	369		5.53	0.001
Synechococcus cf	1475		18.14	0.009
Subtotal	403600		948.48	0.447
Bacillariophyta (Diatom)				
Aulacoseira	416	Filter clogging	169.31	0.250
Cyclotella	2581	Filter clogging	175.50	0.201
Skeletonema	737	Filter clogging	552.75	0.048
Subtotal	3734		897.56	0.499
Euglenophyta (Euglenoid)				
Euglena	139	Discolouration of water	245.75	0.321
Subtotal	139		245.75	0.321
Chlorophyta (Green)				
Ankistrodesmus	2581		970.45	0.348
Dictyosphaerium	8075		581.40	0.121
Kirchneriella	737		36.85	0.014

PHYTOPLANKTON ANALYSIS REPORT

Report no: 282367 | *Depth :* N/A

Supercedes Report No: | *Chlorophyll a:* NA

Microcystin equivalents: NA

Date analysed: 6/04/2023

Lims No: L23028878 | *Date Sampled:* 3/04/2023 | *Analyst:* [redacted]

Client ID: 232137 | *Address:* [redacted]

Site:

Client: **Department of Planning and Environment**

Method: **MA70CENTI**

Issued By : Sydney Water Laboratory Services
Issued On : 06/04/2023

Disclaimer: Samples analysed as received.

TAXA

	Cells/ mL	Significance	ASU/ mL	Biovolum mm3/L
Micractinium	1475		19.17	0.022
Monoraphidium arcuatum	69		18.72	0.014
Monoraphidium cf	2581		69.17	0.050
Oocystis	737		70.01	0.075
Scenedesmus species 1	12463		972.11	0.683
Subtotal	28718		2,737.88	1.327
Cryptophyta (Monad)				
Chroomonas	1844	Common after flood	442.56	0.457
Subtotal	1844		442.56	0.457

	Cells/ mL	ASU/ mL	Biovolume mm3/L
Total Blue Green	403600	948.50	0.447
*** Potentially Toxic Blue Green**	1840	62.40	0.060
*** Potentially Toxic Algae**	1840	62.40	0.060
Total Algae	438000	5272.00	3.050

Comment:

Debris present in the sample.

*Taxa with potential to produce toxins.
ASU : One ASU (Area Standard Unit) equals 400µm² of algal cells (as cross sectional area)
Biovolume : Biovolume is calculated from cell linear dimensions. Guidelines based on Biovolume.
Coccoid Blue Green Picoplankton: *Aphanocapsa; Aphanothece; Cyanogranis; Cyanonephron; Cyanocatena; Gloeocapsa; Gloeothece ; Cyanodictyon*

Phycology

Sydney Water Approved Signatory:

[redacted], Analysis

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Accredited for compliance with ISO/IEC 17025