

Appendix 12 Taxonomic Data QA/QC Reports

This Page Left Intentionally Blank

Worley Parsons BC Marine Benthic Algae 2013
SoftBody Taxonomy QC Counts



| | | Original Abundance | Relative Abundance | Dominance Rank | Duplicate Abundance | Relative Abundance | Dominance Rank | Percent Similarity |
|--------------------|--|-----------------------|-----------------------|-------------------|------------------------|-----------------------|-------------------|-----------------------|
| 6500.01-01 | | | | | | | | |
| % Counted | | 0.12810% | | | 0.001348 | | | |
| Achnantheidium sp. | | 206 | 68.67% | 1 | 207 | 68.32% | 1 | 68.32% |
| Nitzschia sp. | | 63 | 21.00% | 2 | 60 | 19.80% | 2 | 19.80% |
| Navicula sp. | | 30 | 10.00% | 3 | 30 | 9.90% | 3 | 9.90% |
| Diatoma sp. | | 1 | 0.33% | 4 | 2 | 0.66% | 4 | 0.33% |
| Cymbella sp. | | 0 | 0.00% | 5 | 1 | 0.33% | 5 | 0.00% |
| Gomphonema sp. | | 0 | 0.00% | | 1 | 0.33% | | 0.00% |
| Paralia sulcata | | 0 | 0.00% | | 1 | 0.33% | | 0.00% |
| Synedra sp. | | 0 | 0.00% | | 1 | 0.33% | | 0.00% |
| TOTAL | | 300 | | | 302 | | | 98.35% |

| | | Original Abundance | Relative Abundance | Dominance Rank | Duplicate Abundance | Relative Abundance | Dominance Rank | Percent Similarity |
|----------------------|--|-----------------------|-----------------------|-------------------|------------------------|-----------------------|-------------------|-----------------------|
| 6500.01-07 | | | | | | | | |
| % Counted | | 0.54300% | | | 0.000577 | | | |
| Achnantheidium sp. | | 172 | 57.33% | 1 | 174 | 57.43% | 1 | 57.33% |
| Nitzschia sp. | | 92 | 30.67% | 2 | 93 | 30.69% | 2 | 30.67% |
| Navicula sp. | | 20 | 6.67% | 3 | 21 | 6.93% | 3 | 6.67% |
| Skeletonema costatum | | 0 | 0.00% | | 4 | 1.32% | 4 | 0.00% |
| Cymbella sp. | | 5 | 1.67% | 4 | 3 | 0.99% | 5 | 0.99% |
| Pinnularia sp. | | 5 | 1.67% | 5 | 3 | 0.99% | | 0.99% |
| Gyrosigma sp. | | 0 | 0.00% | | 2 | 0.66% | | 0.00% |
| Synedra sp. | | 0 | 0.00% | | 2 | 0.66% | | 0.00% |
| Rhoicosphenia sp. | | 3 | 1.00% | | 1 | 0.33% | | 0.33% |
| Rhopalodia sp. | | 3 | 1.00% | | 0 | 0.00% | | 0.00% |
| TOTAL | | 300 | | | 303 | | | 96.98% |

Worley Parsons BC Marine Benthic Algae 2013
SoftBody Taxonomy QC Counts



| | Original Abundance | Relative Abundance | Dominance Rank | Duplicate Abundance | Relative Abundance | Dominance Rank | Percent Similarity |
|-------------------|-----------------------|-----------------------|-------------------|------------------------|-----------------------|-------------------|-----------------------|
| 6500.01-19 | | | | | | | |
| % Counted | 0.14440% | | | 0.000952 | | | |
| Achnanthidium sp. | 69 | 23.00% | 2 | 205 | 68.33% | 1 | 23.00% |
| Amphora sp. | 11 | 3.67% | | 0 | 0.00% | | 0.00% |
| Cocconeis sp. | 7 | 2.33% | | 0 | 0.00% | | 0.00% |
| Cylindrotheca sp. | 6 | 2.00% | | 0 | 0.00% | | 0.00% |
| Cymbella sp. | 15 | 5.00% | | 12 | 4.00% | | 4.00% |
| Diatoma sp. | 12 | 4.00% | | 5 | 1.67% | | 1.67% |
| Gomphonema sp. | 6 | 2.00% | | 2 | 0.67% | | 0.67% |
| Gyrosigma sp. | 0 | 0.00% | | 3 | 1.00% | | 0.00% |
| Navicula sp. | 98 | 32.67% | 1 | 41 | 13.67% | 2 | 13.67% |
| Nitzschia sp. | 64 | 21.33% | 3 | 22 | 7.33% | 3 | 7.33% |
| Odontella rhombus | 0 | 0.00% | | 1 | 0.33% | | 0.00% |
| Paralia sulcata | 7 | 2.33% | | 0 | 0.00% | | 0.00% |
| Pinnularia sp. | 4 | 1.33% | | 6 | 2.00% | | 1.33% |
| Rhopalodia sp. | 1 | 0.33% | | 1 | 0.33% | | 0.33% |
| Synedra sp. | 0 | 0.00% | | 2 | 0.67% | | 0.00% |
| TOTAL | 300 | | | 300 | | | 52.00% |

Three dominant taxa are consistent between taxonomists. Differences in counts are due to the nature of the samples and subsampling variance.

2013 Worley Parsons BC Marine Benthic
Algae



| | | Original Abundance | Relative Abundance | Dominance Rank | QC Abundance | Relative Abundance | Dominance Rank | Percent Similarity |
|-----------------------|--|-----------------------|-----------------------|-------------------|-----------------|-----------------------|-------------------|-----------------------|
| 6632.01-01 | | | | | | | | |
| Achnantheidium | | 163 | 54.33% | 1 | 135 | 44.85% | 1 | 44.85% |
| Amphora | | 17 | 5.67% | | 10 | 3.32% | | 3.32% |
| Bacillariophyceae | | 0 | 0.00% | | 1 | 0.33% | | 0.00% |
| Centrales | | 8 | 2.67% | | 0 | 0.00% | | 0.00% |
| Cocconeis | | 26 | 8.67% | 4 | 6 | 1.99% | | 1.99% |
| Coscinodiscus | | 2 | 0.67% | | 0 | 0.00% | | 0.00% |
| Entomoneis | | 0 | 0.00% | | 5 | 1.66% | | 0.00% |
| Gyrosigma/Pleurosigma | | 6 | 2.00% | | 2 | 0.66% | | 0.66% |
| Navicula | | 38 | 12.67% | 2 | 94 | 31.23% | 2 | 12.67% |
| Nitzschia | | 29 | 9.67% | 3 | 15 | 4.98% | 4 | 4.98% |
| Paralia | | 1 | 0.33% | | 0 | 0.00% | | 0.00% |
| Pennales | | 7 | 2.33% | | 24 | 7.97% | 3 | 2.33% |
| Pleurosigma | | 0 | 0.00% | | 2 | 0.66% | | 0.00% |
| Pseudo-nitzschia | | 3 | 1.00% | | 0 | 0.00% | | 0.00% |
| Synedra | | 0 | 0.00% | | 7 | 2.33% | | 0.00% |
| TOTAL | | 300 | | | 301 | | | 70.81% |

2013 Worley Parsons BC Marine Benthic
Algae



| | | Original Abundance | Relative Abundance | Dominance Rank | QC Abundance | Relative Abundance | Dominance Rank | Percent Similarity |
|-----------------------|---|-----------------------|-----------------------|-------------------|-----------------|-----------------------|-------------------|-----------------------|
| 6632.01-12 | | | | | | | | |
| Achnanthes | | 0 | 0.00% | | 3 | 1.00% | | 0.00% |
| Achnantheidium | | 43 | 14.01% | 3 | 129 | 43.00% | 1 | 14.01% |
| Amphora | | 20 | 6.51% | | 0 | 0.00% | | 0.00% |
| Campylodiscus | | 0 | 0.00% | | 4 | 1.33% | | 0.00% |
| Centrales | | 0 | 0.00% | | 25 | 8.33% | | 0.00% |
| Cocconeis | | 4 | 1.30% | | 2 | 0.67% | | 0.67% |
| Cyclotella | | 4 | 1.30% | | 0 | 0.00% | | 0.00% |
| Cylindrotheca | | 4 | 1.30% | | 1 | 0.33% | | 0.33% |
| Cymbella | | 0 | 0.00% | | 3 | 1.00% | | 0.00% |
| Delphineis/Rhaphoneis | | 17 | 5.54% | | 0 | 0.00% | | 0.00% |
| Diploneis | | 2 | 0.65% | | 0 | 0.00% | | 0.00% |
| Eutreptiella | | 1 | 0.33% | | 0 | 0.00% | | 0.00% |
| Gyrosigma/Pleurosigma | | 0 | 0.00% | | 2 | 0.67% | | 0.00% |
| Leucocryptos sp. | * | 0 | 0.00% | | 1 | 0.33% | | 0.00% |
| Navicula | | 131 | 42.67% | 1 | 77 | 25.67% | 2 | 25.67% |
| Nitzschia | | 63 | 20.52% | 2 | 10 | 3.33% | | 3.33% |
| Pennales | | 7 | 2.28% | | 42 | 14.00% | 3 | 2.28% |
| Prorocentrum | | 5 | 1.63% | | 0 | 0.00% | | 0.00% |
| Synedra | | 2 | 0.65% | | 0 | 0.00% | | 0.00% |
| Unknown alga | | 3 | 0.98% | | 0 | 0.00% | | 0.00% |
| Unknown diatom | | 0 | 0.00% | | 1 | 0.33% | | 0.00% |
| Urosolenia | | 1 | 0.33% | | 0 | 0.00% | | 0.00% |
| TOTAL | | 307 | | | 300 | | | 46.29% |

Worley Parsons BC Marine Benthic Algae 2013
QC Report



| 6500.03-11 | Original Abundance | Relative Abundance | QC Abundance | Relative Abundance | Percent Similarity |
|--|--------------------|--------------------|--------------|--------------------|--------------------|
| Achnanthes | 0 | 0.00% | 4 | 1.33% | 0.00% |
| Achnantheidium | 13 | 4.32% | 0 | 0.00% | 0.00% |
| Amphora | 40 | 13.29% | 35 | 11.67% | 11.67% |
| Aulacoseira | 0 | 0.00% | 2 | 0.67% | 0.00% |
| Bacillaria sp. | 0 | 0.00% | 2 | 0.67% | 0.00% |
| Bacillariophyceae | 0 | 0.00% | 8 | 2.67% | 0.00% |
| Centrales | 0 | 0.00% | 4 | 1.33% | 0.00% |
| Cocconeis | 11 | 3.65% | 43 | 14.33% | 3.65% |
| Cyclotella | 2 | 0.66% | 0 | 0.00% | 0.00% |
| Cymbella | 19 | 6.31% | 0 | 0.00% | 0.00% |
| Delphineis/Rhaphoneis sp. | 1 | 0.33% | 0 | 0.00% | 0.00% |
| Diploneis | 0 | 0.00% | 7 | 2.33% | 0.00% |
| Eunotia | 7 | 2.33% | 0 | 0.00% | 0.00% |
| Frustulia | 2 | 0.66% | 0 | 0.00% | 0.00% |
| Gomphonema | 1 | 0.33% | 0 | 0.00% | 0.00% |
| Gyrosigma | 0 | 0.00% | 2 | 0.67% | 0.00% |
| Melosira | 0 | 0.00% | 6 | 2.00% | 0.00% |
| Navicula | 90 | 29.90% | 56 | 18.67% | 18.67% |
| Nitzschia | 38 | 12.62% | 56 | 18.67% | 12.62% |
| Paralia | 3 | 1.00% | 31 | 10.33% | 1.00% |
| Pennales | 65 | 21.59% | 24 | 8.00% | 8.00% |
| Pinnularia | 1 | 0.33% | 1 | 0.33% | 0.33% |
| Pleurosigma | 3 | 1.00% | 4 | 1.33% | 1.00% |
| Rhoicosphenia abbreviata (Agardh) Lange-Bertalot | 0 | 0.00% | 2 | 0.67% | 0.00% |
| Skeletonema | 0 | 0.00% | 2 | 0.67% | 0.00% |
| Surirella | 2 | 0.66% | 6 | 2.00% | 0.66% |
| Tabularia tabulata (Agardh) Snoeijs | 0 | 0.00% | 5 | 1.67% | 0.00% |
| Trachelomonas | 1 | 0.33% | 0 | | 0.33% |
| Tryblionella | 2 | 0.66% | 0 | 0.00% | 0.00% |
| TOTAL | 301 | | 300 | | 57.93% |

| 6500.03-14 | Original Abundance | Relative Abundance | QC Abundance | Relative Abundance | Percent Similarity |
|------------------------------|---------------------------|---------------------------|---------------------|---------------------------|---------------------------|
| Achnanthydium | 16 | 5.33% | 36 | 12.00% | 5.33% |
| Amphora | 21 | 7.00% | 70 | 23.33% | 7.00% |
| Asterionella formosa Hassall | 0 | 0.00% | 1 | 0.33% | 0.00% |
| Aulacoseira | 2 | 0.67% | 1 | 0.33% | 0.33% |
| Bacillaria sp. | 1 | 0.33% | 8 | 2.67% | 0.33% |
| Campylodiscus | 1 | 0.33% | 0 | 0.00% | 0.00% |
| Centrales | 0 | 0.00% | 2 | 0.67% | 0.00% |
| Chaetoceros | 1 | 0.33% | 0 | 0.00% | 0.00% |
| Chroomonas | 2 | 0.67% | 0 | 0.00% | 0.00% |
| Cocconeis | 6 | 2.00% | 22 | 7.33% | 2.00% |
| Coscinodiscus | 6 | 2.00% | 0 | 0.00% | 0.00% |
| Cyclotella | 7 | 2.33% | 0 | 0.00% | 0.00% |
| Cylindrotheca | 1 | 0.33% | 0 | 0.00% | 0.00% |
| Cymbella | 5 | 1.67% | 6 | 2.00% | 1.67% |
| Delphineis/Rhaphoneis sp. | 7 | 2.33% | 0 | 0.00% | 0.00% |
| Diatoma | 5 | 1.67% | 4 | 1.33% | 1.33% |
| Diploneis | 2 | 0.67% | 0 | 0.00% | 0.00% |
| Entomoneis | 7 | 2.33% | 0 | 0.00% | 0.00% |
| Epithemia | 0 | 0.00% | 2 | 0.67% | 0.00% |
| Eunotia | 3 | 1.00% | 0 | 0.00% | 0.00% |
| Fragilaria | 1 | 0.33% | 0 | 0.00% | 0.00% |
| Frustulia | 2 | 0.67% | 0 | 0.00% | 0.00% |
| Gomphonema | 2 | 0.67% | 18 | 6.00% | 0.67% |
| Gomphosphenia | 0 | 0.00% | 2 | 0.67% | 0.00% |
| Gyrosigma | 1 | 0.33% | 10 | 3.33% | 0.33% |
| Heterosigma | 2 | 0.67% | 0 | 0.00% | 0.00% |
| Melosira | 0 | 0.00% | 11 | 3.67% | 0.00% |
| Navicula | 35 | 11.67% | 55 | 18.33% | 11.67% |
| Nitzschia | 113 | 37.67% | 42 | 14.00% | 14.00% |
| Paralia | 4 | 1.33% | 0 | 0.00% | 0.00% |
| Pennales | 26 | 8.67% | 3 | 1.00% | 1.00% |
| Placoneis | 0 | 0.00% | 2 | 0.67% | 0.00% |
| Planothidium | 0 | 0.00% | 1 | 0.33% | 0.00% |
| Pleurosigma | 3 | 1.00% | 4 | 1.33% | 1.00% |

| | Original Abundance | Relative Abundance | QC Abundance | Relative Abundance | Percent Similarity |
|------------------------|--------------------|--------------------|--------------|--------------------|--------------------|
| 6500.03-14 | | | | | |
| Pyromimonas sp. | 2 | 0.67% | 0 | 0.00% | 0.00% |
| Skeletonema | 3 | 1.00% | 0 | 0.00% | 0.00% |
| Striatella | 1 | 0.33% | 0 | 0.00% | 0.00% |
| Surirella | 4 | 1.33% | 0 | 0.00% | 0.00% |
| Trachelomonas | 2 | 0.67% | 0 | 0.00% | 0.00% |
| Tryblionella | 5 | 1.67% | 0 | 0.00% | 0.00% |
| Unknown Dinoflagellate | 1 | 0.33% | 0 | 0.00% | 0.00% |
| TOTAL | 300 | | 300 | | 46.67% |

| | Original Abundance | Relative Abundance | QC Abundance | Relative Abundance | Percent Similarity |
|---------------------------|--------------------|--------------------|--------------|--------------------|--------------------|
| 6527.03-24 | | | | | |
| Achnanthes | 0 | 0.00% | 1 | 0.33% | 0.00% |
| Achnantheidium | 137 | 45.67% | 2 | 0.65% | 0.65% |
| Amphora | 14 | 4.67% | 35 | 11.44% | 4.67% |
| Bacillaria sp. | 1 | 0.33% | 36 | 11.76% | 0.33% |
| Bacillariophyceae | 0 | 0.00% | 20 | 6.54% | 0.00% |
| Centrales | 0 | 0.00% | 1 | 0.33% | 0.00% |
| cf Dickieia | 0 | 0.00% | 4 | 1.31% | 0.00% |
| Chlamydomonas | 3 | 1.00% | 0 | 0.00% | 0.00% |
| Cocconeis | 40 | 13.33% | 29 | 9.48% | 9.48% |
| Cyclotella | 1 | 0.33% | 0 | 0.00% | 0.00% |
| Delphineis/Rhaphoneis sp. | 4 | 1.33% | 0 | 0.00% | 0.00% |
| Diploneis | 1 | 0.33% | 4 | 1.31% | 0.33% |
| Entomoneis | 3 | 1.00% | 1 | 0.33% | 0.33% |
| Epithemia | 0 | 0.00% | 2 | 0.65% | 0.00% |
| Eunotia | 2 | 0.67% | 0 | 0.00% | 0.00% |
| Fallacia | 0 | 0.00% | 3 | 0.98% | 0.00% |
| Fragilaria | 1 | 0.33% | 0 | 0.00% | 0.00% |
| Frustulia | 1 | 0.33% | 0 | 0.00% | 0.00% |
| Gomphonema | 0 | 0.00% | 2 | 0.65% | 0.00% |
| Gyrosigma | 0 | 0.00% | 1 | 0.33% | 0.00% |
| Hantzschia spp | 0 | 0.00% | 6 | 1.96% | 0.00% |
| Hemiselmis | 1 | 0.33% | 0 | 0.00% | 0.00% |
| Melosira | 2 | 0.67% | 2 | 0.65% | 0.65% |

| 6527.03-24 | Original Abundance | Relative Abundance | QC Abundance | Relative Abundance | Percent Similarity |
|---------------|--------------------|--------------------|--------------|--------------------|--------------------|
| Navicula | 46 | 15.33% | 30 | 9.80% | 9.80% |
| Nitzschia | 18 | 6.00% | 34 | 11.11% | 6.00% |
| Odontella | 9 | 3.00% | 14 | 4.58% | 3.00% |
| Paralia | 0 | 0.00% | 14 | 4.58% | 0.00% |
| Pennales | 15 | 5.00% | 36 | 11.76% | 5.00% |
| Placoneis | 0 | 0.00% | 6 | 1.96% | 0.00% |
| Plagiotropis | 0 | 0.00% | 11 | 3.59% | 0.00% |
| Planothidium | 0 | 0.00% | 3 | 0.98% | 0.00% |
| Raphoneis | 0 | 0.00% | 3 | 0.98% | 0.00% |
| Skeletonema | 0 | 0.00% | 6 | 1.96% | 0.00% |
| Trachelomonas | 1 | 0.33% | 0 | 0.00% | 0.00% |
| TOTAL | 300 | | 306 | | 40.25% |