

Central Davis Sewer District Algal ID and Enumeration Report

Prepared: February 1, 2021

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Samples: 2 (Collected on 10/20/20)

1. FB1
2. FB4

Sample 1: FB1

Total cell numbers in the FB1 sample collected on 10/20/20 were 687,433 cells/mL. Green algae (Chlorophyta; 385,969 cells/mL) were the most abundant algal group in the sample accounting for 56.1% of total cell numbers. Other algal groups in the sample were diatoms (Bacillariophyceae; 103,016 cells/mL), desmids (Charophyta; 10 cells/mL), golden-brown algae (Chrysophyceae; 10,472 cells/mL), cryptophytes (Cryptophyta; 6,754 cells/mL), blue-green algae (Cyanobacteria; 168,432 cells/mL), dinoflagellates (Dinophyceae; 209 cells/mL), euglenophytes (Euglenophyta; 4,717 cells/mL) and unknown unicells and flagellates (Unknown; 7,854 cells/mL). The most abundant algae in the sample were small, oval-shaped chlorophyte unicells (96,865 cells/mL; Fig. 1). A total of 96 species were observed in the sample with green algae the most diverse group with 41 taxa.

Total cell numbers of potentially toxigenic cyanobacteria (PTOX Cyano) were 14,523 cells/mL (2.1% of total cell numbers). PTOX Cyano species observed in the sample included *Limnothrix/Pseudanabaena* sp. (13,368 cells/mL; Fig. 2), *Phormidium* sp. (475 cells/mL; Fig. 3), *Lyngbya/Oscillatoria* sp. (245 cells/mL; Fig. 4), *Dolichospermum* sp. (230 cells/mL; Fig. 5), *Nodularia spumigena* (110 cells/mL; Fig. 6) and *Aphanizomenon gracile* (95 cells/mL; Fig. 7).

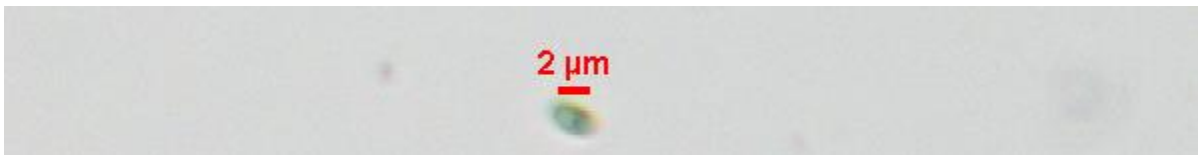


Fig. 1 chlorophyte unicell sp. 400X (scale bar = 2μm)

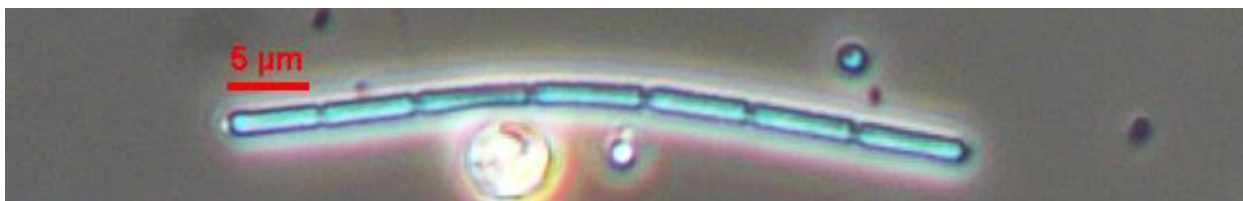


Fig. 2 *Limnothrix/Pseudanabaena* sp. 400X (scale bar = 5μm)

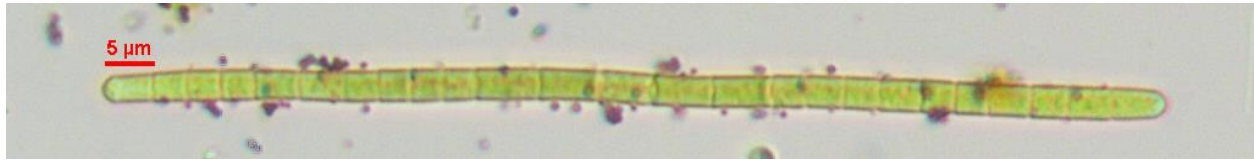


Fig. 3 *Phormidium* sp. 400X (scale bar = 5µm)



Fig. 4 *Lyngbya/Oscillatoria* sp. 400X (scale bar = 5µm)

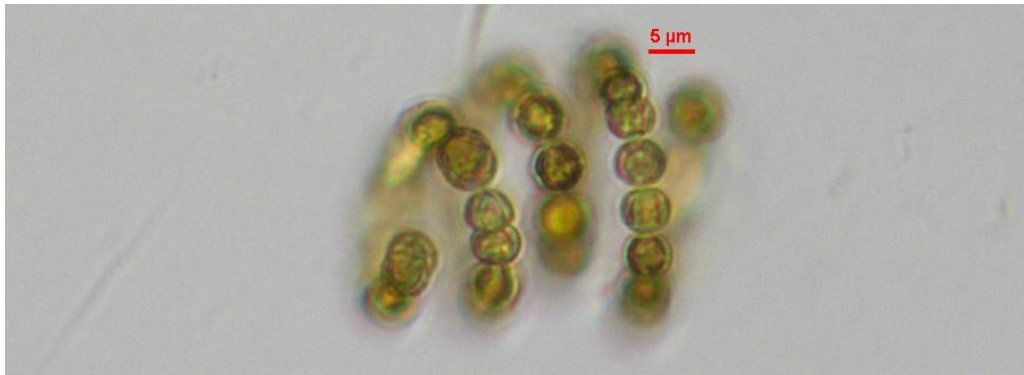


Fig. 5 *Dolichospermum* sp. 400X (scale bar = 5µm)

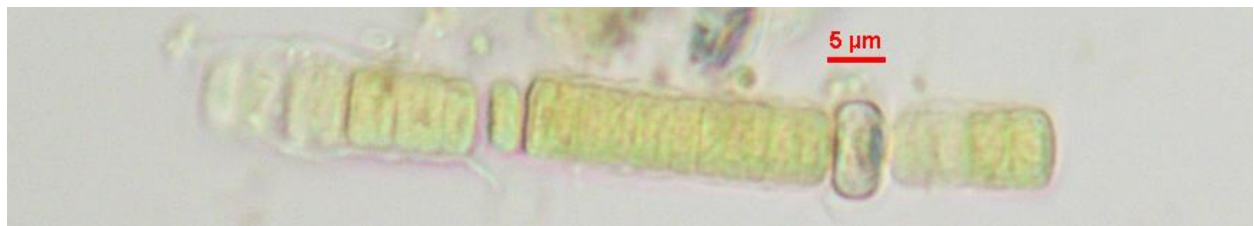


Fig. 6 *Nodularia spumigena* 400X (scale bar = 5µm)

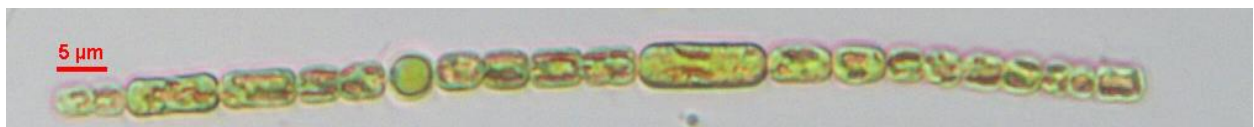


Fig. 7 *Aphanizomenon gracile* 400X (scale bar = 5µm)

Sample 2: FB4

Total cell numbers in the FB4 sample collected on 10/20/20 were 223,396 cells/mL. Green algae (Chlorophyta; 88,008 cells/mL) and blue-green algae (Cyanobacteria; 84,368 cells/mL) were the most abundant algal groups in the sample accounting for 39.4% and 37.8% of total cell numbers respectively. Other algal groups in the sample were diatoms (Bacillariophyceae; 20,947 cells/mL), golden-brown algae (Chrysophyceae; 942 cells/mL), cryptophytes (Cryptophyta; 27,101 cells/mL), dinoflagellates (Dinophyceae; 2 cells/mL), euglenophytes (Euglenophyta; 332 cells/mL), red algae (Rhodophyta; 124 cells/mL) and unknown flagellates (Unknown; 1,571 cells/mL). The most abundant alga in the sample was the colonial cyanophyte *Aphanocapsa* sp. (42,725 cells/mL; Fig. 8). A total of 82 species were observed in the sample with green algae the most diverse group with 37 taxa.

Total cell numbers of potentially toxigenic cyanobacteria (PTOX Cyano) were 376 cells/mL (0.2% of total cell numbers). PTOX Cyano species observed in the sample included *Lyngbya/Oscillatoria* sp. (294 cells/mL; Fig. 9), *Nodularia spumigena* (48 cells/mL; Fig. 10), *Anabaena* sp. (22 cells/mL; Fig. 11) and *Phormidium* sp. (12 cells/mL).

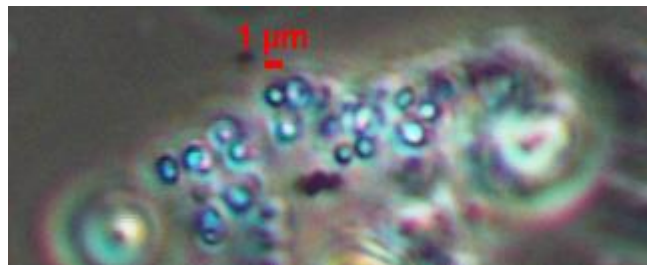


Fig. 8 *Aphanocapsa* sp. 400X (scale bar = 1 µm)



Fig. 9 *Lyngbya/Oscillatoria* sp. 400X (scale bar = 5 µm)

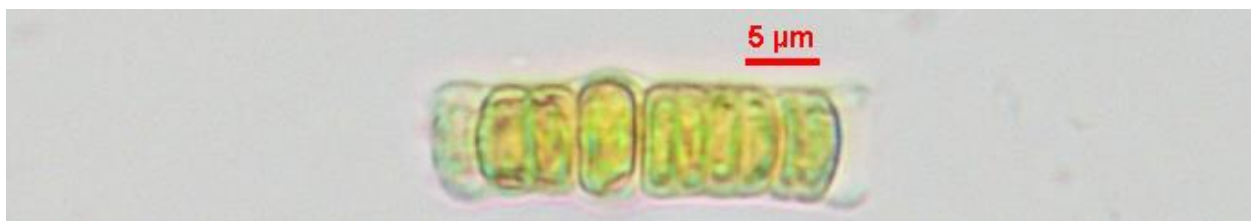


Fig. 10 *Nodularia spumigena* 400X (scale bar = 5 µm)

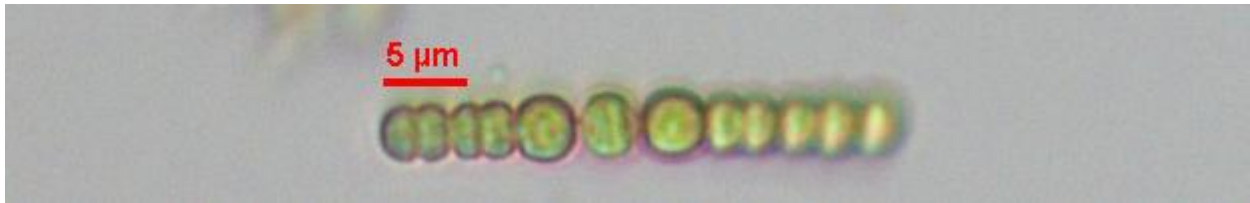


Fig. 11 *Anabaena* sp. 400X (scale bar = 5µm)