**Table S1** Summary of metagenomic data for Organic Lake samples.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Sample ID | Depth (m) | Filter size (µm) | Total trimmed reads | Total ORFs predicted from reads (% KEGG matches) | Total Scaffolds  (reads assembled) | Scaffolds over 10 kb (reads in these contigs) | Annotated predicted ORFs from contigs (total ORFs) |
| GS374 | 1.7 | 0.1  0.8  3.0 | 494 573  472 635  158 121 | 533 468 (31)  470 949 (52)  158 573 (50) | 4 318 (63 194)  4 161 (126 519)  2 584 (39 591) | 5 (771)  68 (17 061)  4 (520) | 33 262 (83 684)  37 857 (63 140)  18 126 (28 425) |
| GS375 | 4.2 | 0.1  0.8  3.0 | 541 962  472 570  321 112 | 556 791 (30)  492 130 (53)  324 365 (56) | 4 899 (80 316)  5 104 (127 243)  3 983 (98 102) | 2 (232)  80 (18 461)  69 (14 713) | 35 318 (87 631)  42 508 (68 366)  30 938 (68 366) |
| GS376 | 5.7 | 0.1  0.8  3.0 | 363 280  484 635  290 428 | 387 528 (25)  448 373 (59)  292 358 (51) | 2 342 (39 422)  6 820 (152 646)  3 571 (77 277) | 6 (1 801)  134 (29 903)  58 (10 231) | 21 798 (61 595)  47 846 (73 282)  28 199 (48 910) |
| GS377 | 6.5 | 0.1  0.8  3.0 | 497 363  465 381  187 045 | 572 892 (29)  454 018 (51)  211 354 (59) | 5 029 (80 520)  4 202 (129 193)  2 100 (60 636) | 14 (2 711)  57 (17 004)  51 (9 321) | 36 685 (92 420)  43 852 (70 382)  20 713 (33 497) |
| GS378 | 6.7 | 0.1  0.8  3.0 | 516 870  548 253  202 310 | 586 375 (26)  626 115 (57)  219 992 (58) | 3 694 (58 618)  6 957 (161 202)  2 304 (66 389) | 14 (3 422)  136 (32 889)  57 (11 167) | 33 243 (96 334)  56 452 (88 738)  22 786 (35 034) |