**Supporting information**

Species and bio-availability of inorganic and organic phosphorus in primary, secondary and digested sludge

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**Table S1.** Variation of COD, NH4-N, TP, and PO4-P in the influent and effluent from the treatment units of the WWTP

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Treatment units** | **COD****(mg/l)** | **NH4-N****(mg/l)** | **TP****(mg/l)** | **PO4-P****(mg/l)** |
| Influent | 205.3 | 28.3 | 3.0 | 2.3 |
| Primary settling tank effluent | 248.8 | 30.2 | 3.5 | 3.4 |
| Digestion tank effluent | 714.2 | 636.9 | 241.4 | 211.8 |
| Effluent | 19.3 | 1.3 | 0.2 | 0.1 |

COD, chemical oxygen demand; TP, total phosporus.

(9)

(5)

(4)

(3)

(2)

(1)



Biogas

Sludge

Water

(6)

(7)

(8)

(10)

**Figure S1.** Process flow diagram of wastewater treatment plant in Shimodate, Ibaraki Prefecture, Japan. (1) influent, (2) grid, (3) primary settling tank, (4) aeration tank, (5) secondary settling tank, (6) sludge concentration tank, (7) digestion tank, (8) sludge dewatering, (9) effluent, (10) sludge disposal.



**Fig. S2.** The schematic diagram of the SMT protocol (Ruban, 1999; Medeiros, 2005).