

Supplementary Information to: The Impact of NaOH, CaO, and $\text{HCO}_3^- + \text{Ca}^{+2}$ Addition on PIC and POC Formation in Los Angeles Harbor Waters

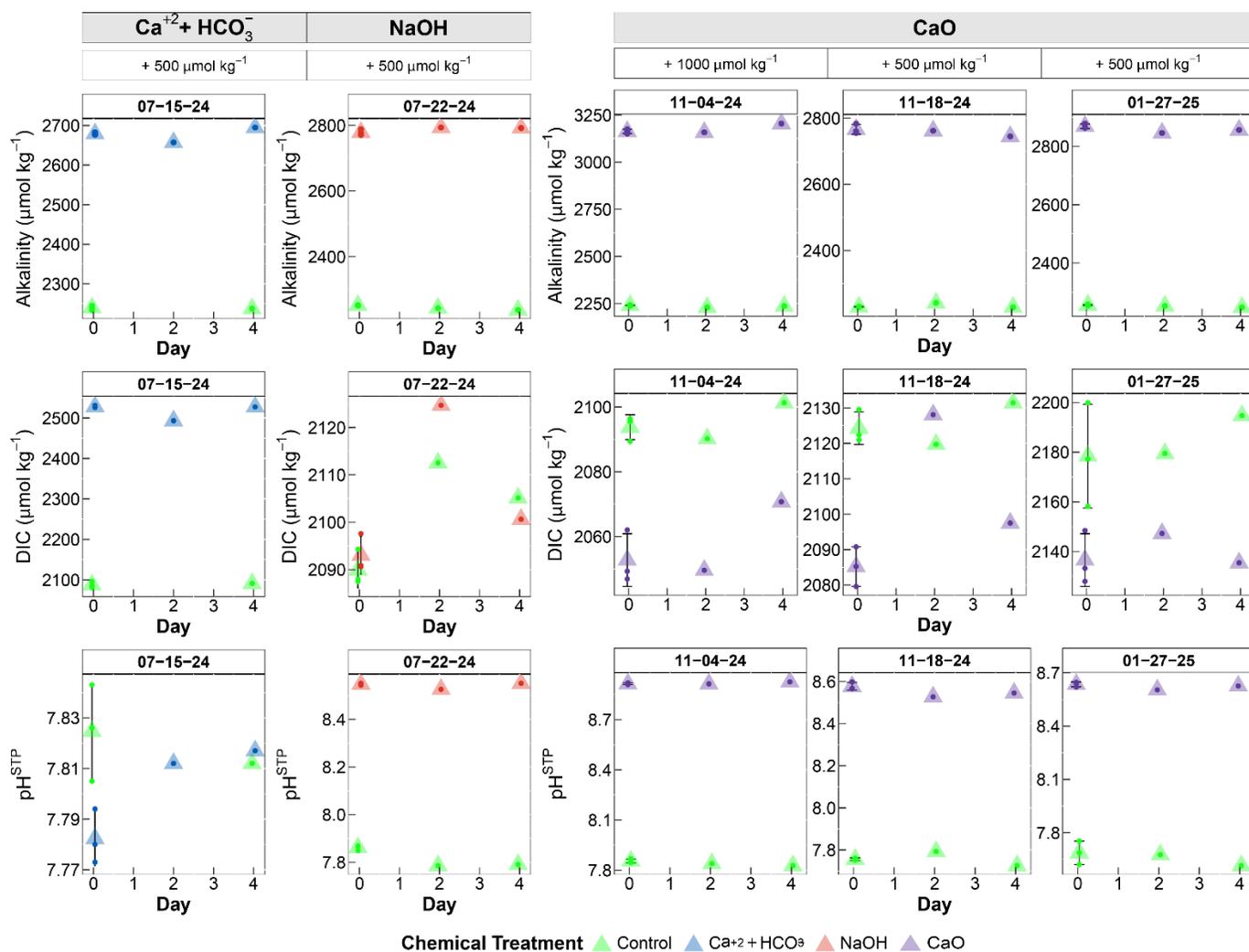
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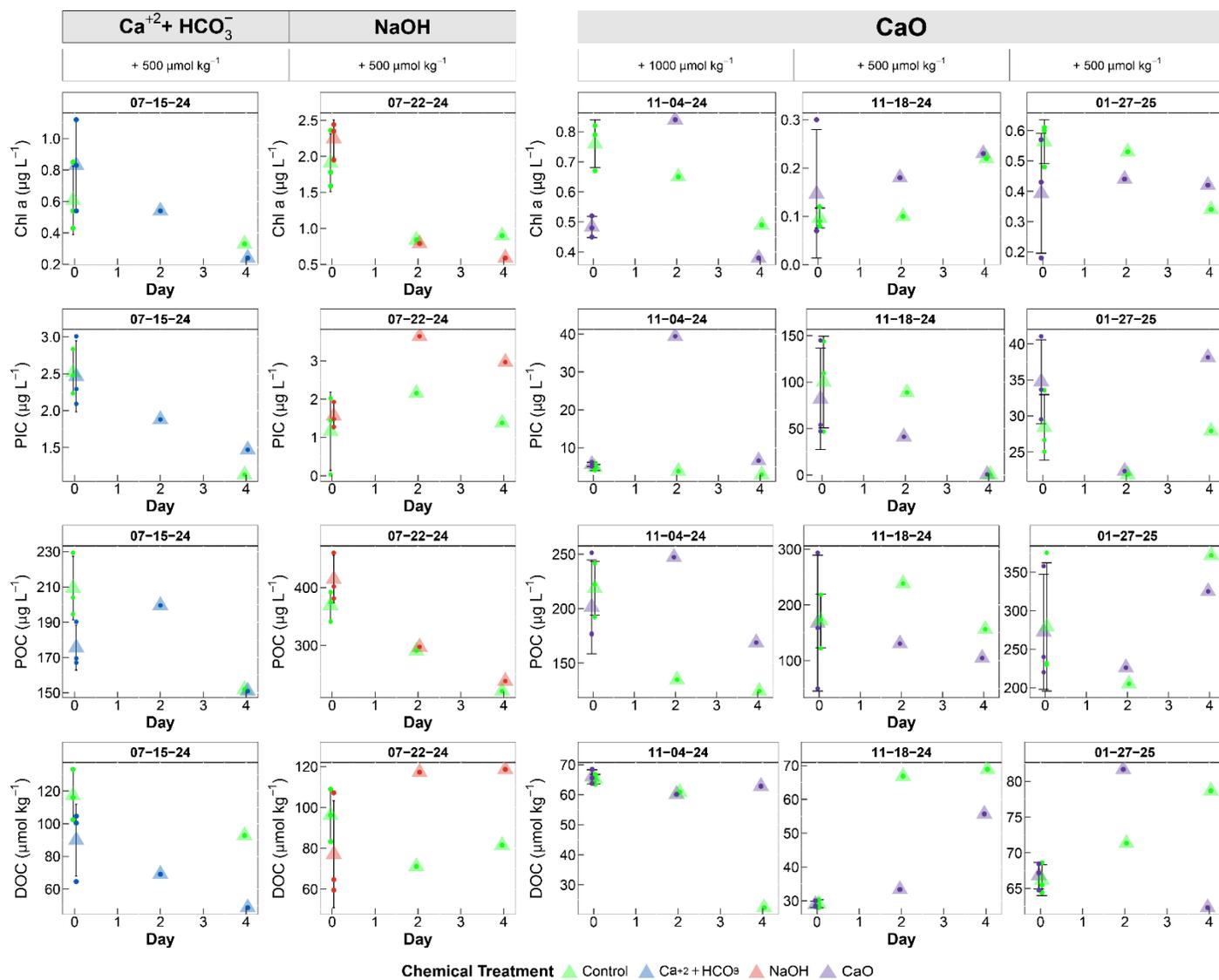
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1. Summary of Data from “Dark-Bottles” during Alkalinity Enhancement Experiments



Supplemental Figure 1: Summary of Carbonate Chemistry measured in “Dark Bottles”. Data in figure panels (First Row) Total Alkalinity $\mu\text{mol kg}^{-1}$, (Second Row) Dissolved Inorganic Carbon $\mu\text{mol kg}^{-1}$, and (Third Row) pH (as calculated from the Total Alkalinity and DIC pair in CO2sys.v3 – detailed in Methods). Bottles that were devoid of light (deployed during the in-situ experiments) are shown in these figures; Day 0 Bottles from the normal light exposure experiments shown for reference (n=3). Day 2 and Day 4 bottles have an n=1 (Statistical analysis was not conducted on this data – only being presented for qualitative assessment). Treatments include Control (green), NaOH (red), $\text{CaCl}_2 + \text{NaHCO}_3$ (blue), and CaO (purple).



Supplemental Figure 2: Summary of Biogeochemical variables measured in “Dark Bottles”. Data in figure panels (First Row) Chl-a $\mu\text{g L}^{-1}$, (Second Row) Particulate Inorganic Carbon $\mu\text{gC L}^{-1}$, (Third Row) Particulate Organic Carbon $\mu\text{gC L}^{-1}$, and (Fourth Row) Dissolved Organic Carbon $\mu\text{mol kg}^{-1}$. Bottles that were devoid of light (deployed during the in-situ experiments) are shown in these figures; Day 0 Bottles

from the normal light exposure experiments shown for reference ($n=3$). Day 2 and Day 4 bottles have an $n=1$ (Statistical analysis was not conducted on this data – only being presented for qualitative assessment). Treatments include Control (green), NaOH (red), $\text{CaCl}_2 + \text{NaHCO}_3$ (blue), and CaO (purple).

In the 4-day experiments we also included 4 bottles that received no light (2 controls and 2 treatments), while the remaining 18 bottles were subjected to the regular day-night cycle. A summary of the carbonate system manipulations can be seen in Supplemental Figure 1. The biogeochemical changes to alkalinity additions are summarized in Supplemental Figure 2. There were no replicate bottles on Day 2 and 4, hence, we did not conduct any statistical analysis on this dataset. We have included this dataset for qualitative results that may encourage further study of the impacts of alkalinity on dark metabolic reactions and organic matter cycling. There are no consistent trends in Chl a or particulate organic carbon (POC) concentrations across treatments. We see an increase of PIC and DOC in the NaOH-treatment bottles relative to the control conditions, but we caution against making any conclusive judgements about the effective alkalinity on dark reactions from this dataset.