Concomitant with the loss in telomer alcohols was the formation of compounds with HPLC/MS ions and retention times consistent with perfluorinated acids (PFAs), including perfluorooctanoate (PFOA, C_8-PFA), which was confirmed as an end product. The transformation of telomer alcohols to PFAs was rapid, with a large increase in all of the PFA peak area responses at day 1, and continuing increase through day-16 (**Figure 5**). No degradation to form PFAs was observed in the abiotic no-sludge controls.

Although PFOA was accurately quantified, many other perfluorinated acids were qualitatively observed and their relative concentrations determined based on the observed increasing peak area response. The observed perfluorinated fatty acid end products were: perfluoropentanoic acid (C_5 PFA), perfluorohexanoic acid (C_6-PFA), perfluoroheptanoic acid (C_7-PFA), perfluorooctanoic acid (C_8-PFA, PFOA), perfluorononanoic acid (C_9-PFA), perfluorodecanoic acid (C_{10}-PFA), perfluoroundecanoic acid (C_{11}-PFA) and perfluorododecanoic acid (C_{12}-PFA).

Transiently formed intermediate compounds were also observed at early time points following the initial exposure of the sludge to the telomer alcohol substrate (**Figure 6**). The transient compounds were suspected to be: 2H, 2H-perfluorooctanoate; 2H, 2H –perfluorodecanoate; 2H, 2H Perfluorododecanoate and the possible β-oxidation pathway intermediates: 2H-perfluoro-2-octenoate, 2H-perfluoro-2-decenoate, and 2H-perfluoro-2-dodecenoate. **Table 3** shows the MS ions and retention times observed for the polyfluorinated and perfluorinated acid products and the telomer alcohol parent substrates.

HPLC/MS/MS Data (**Table 4**) support the identification of the suspected metabolites..