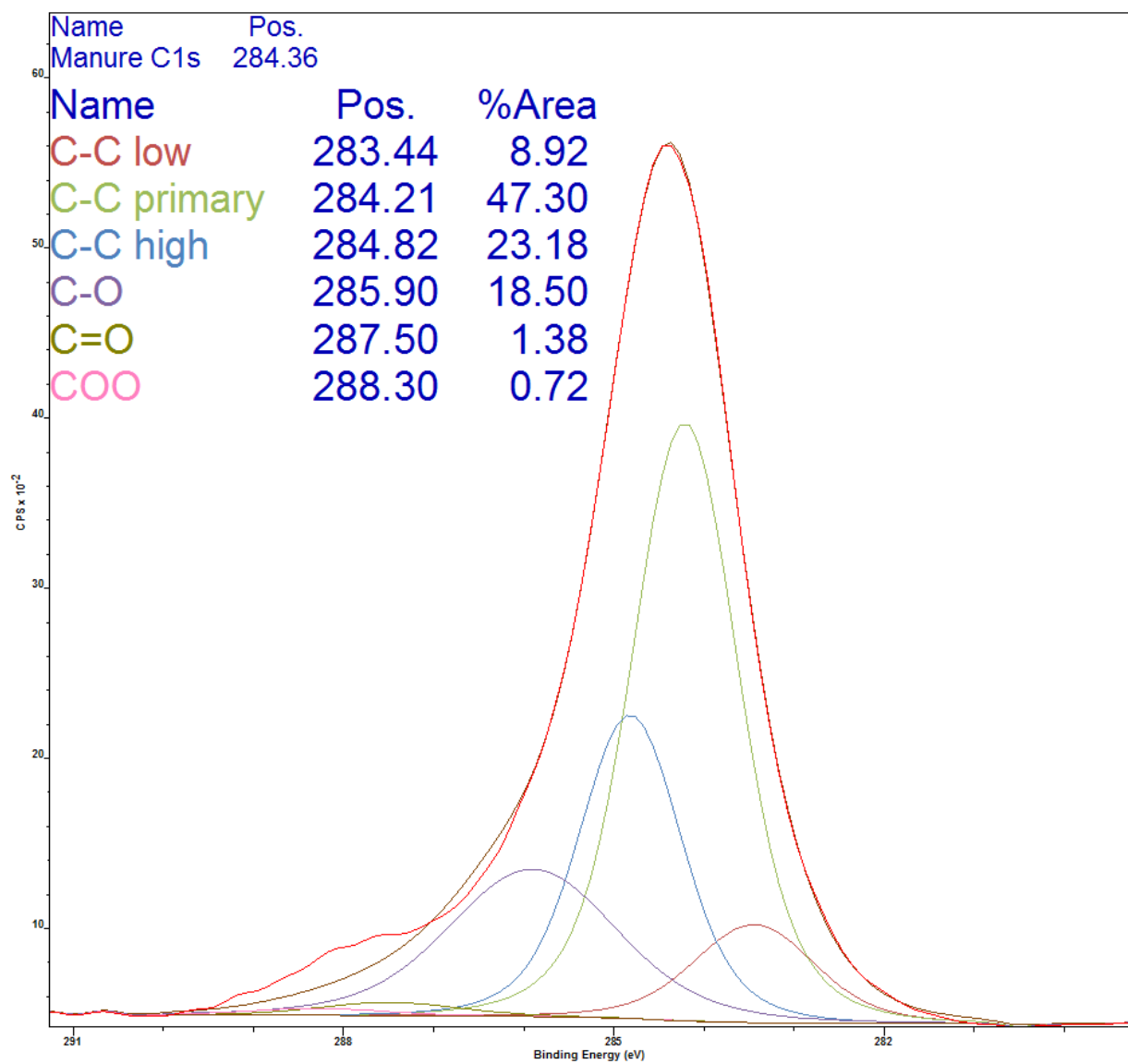
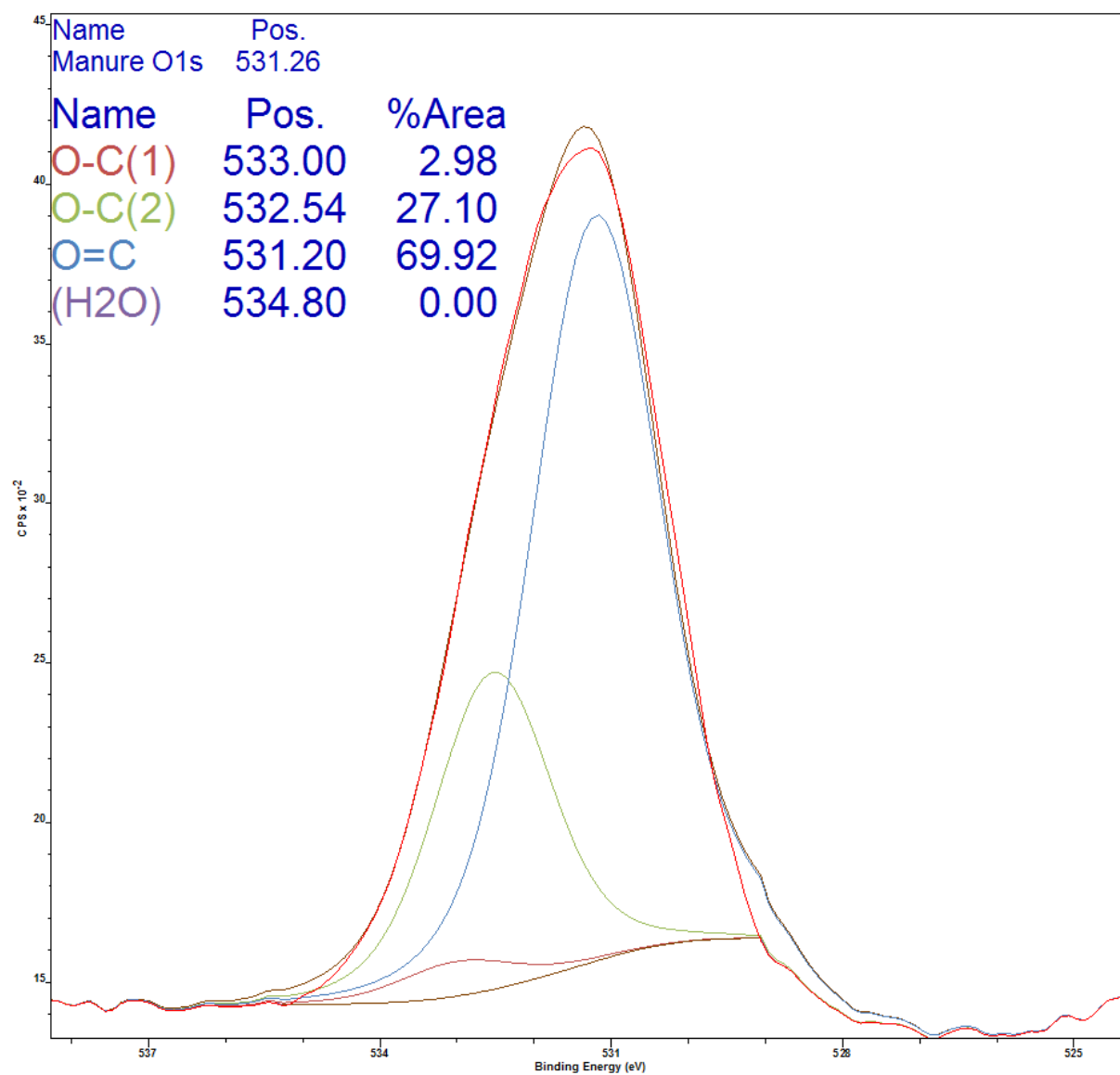


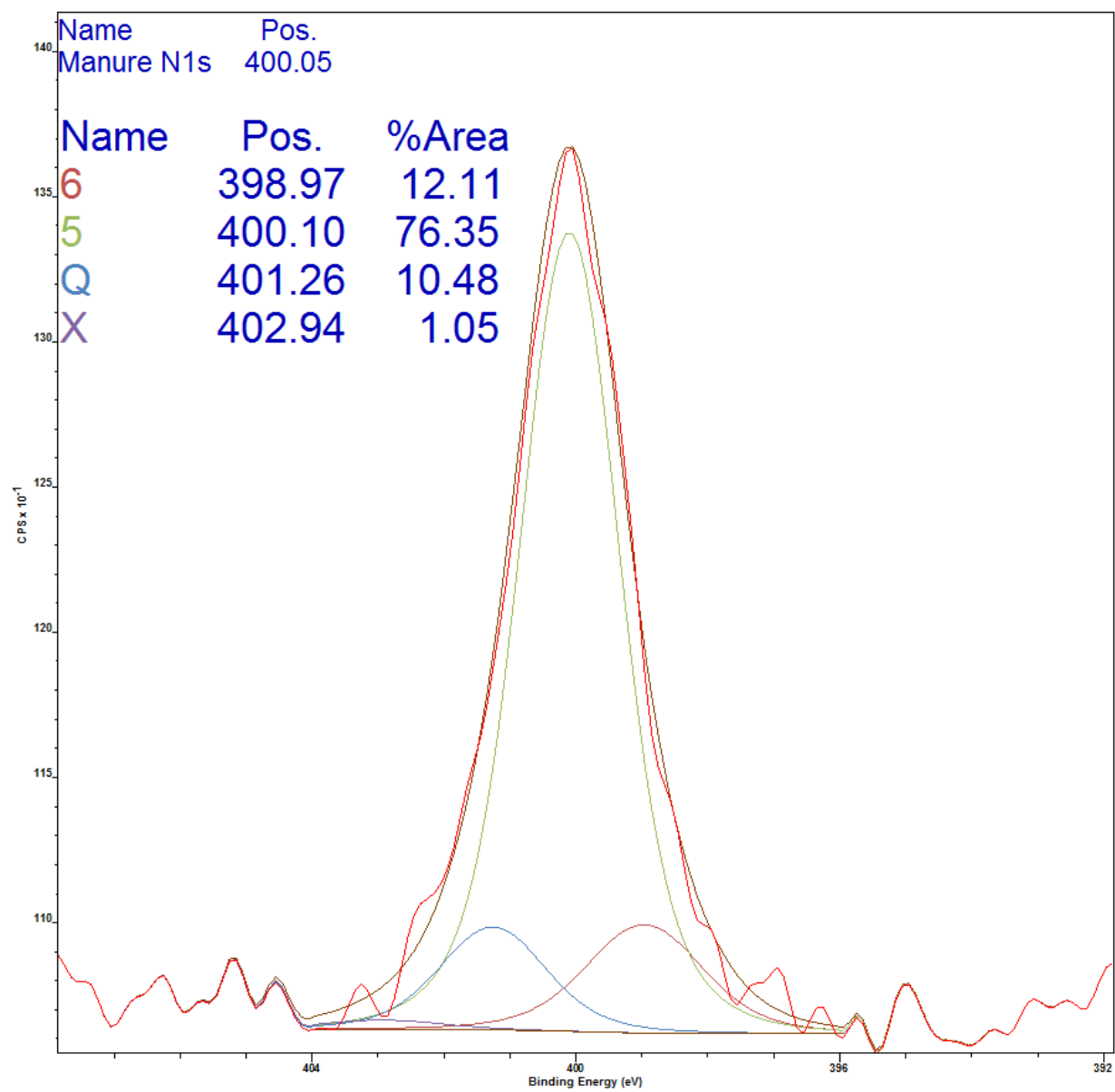
Supplementary Figure 1 (a-i).



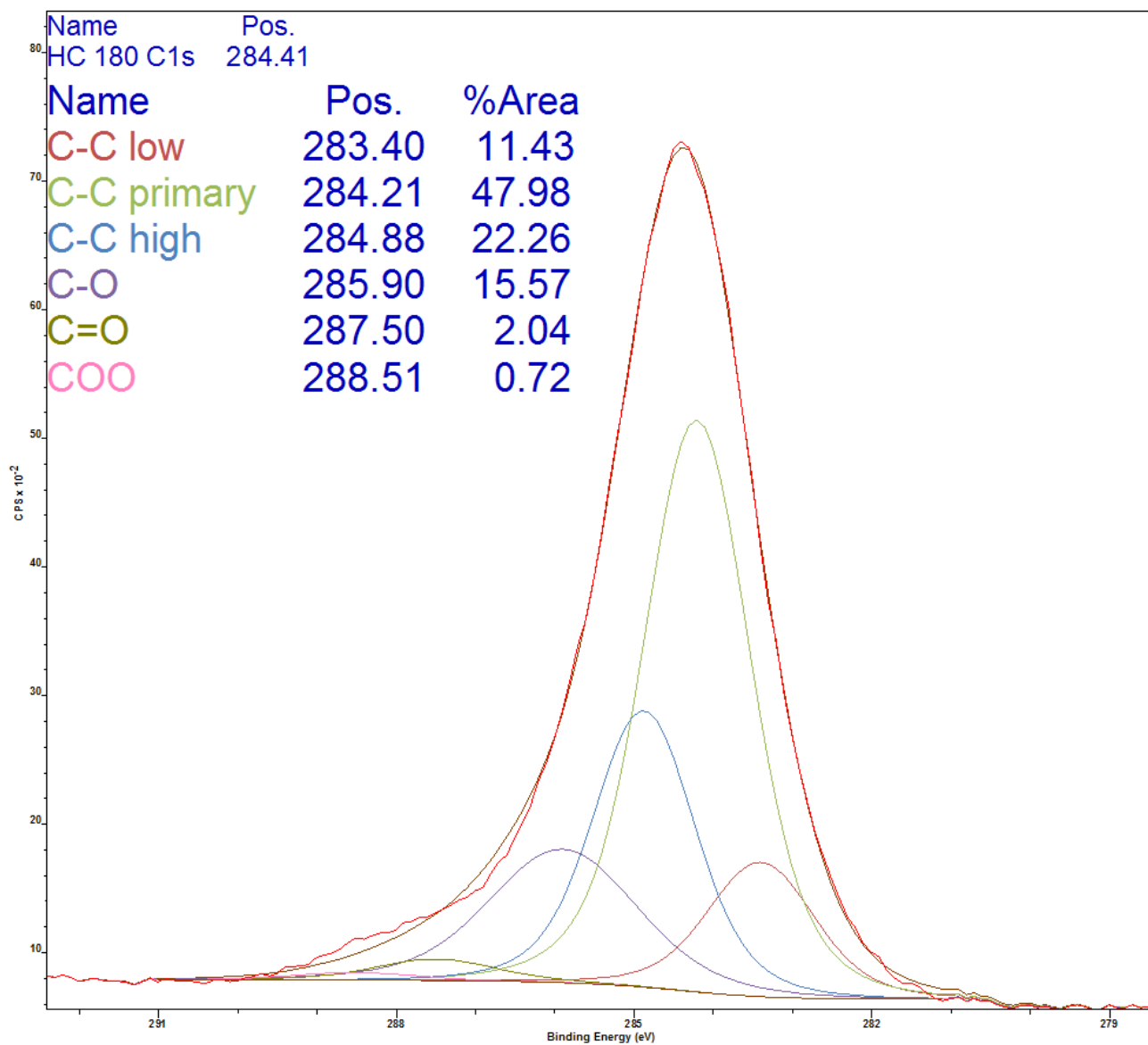
1 (a) Manure C 1s



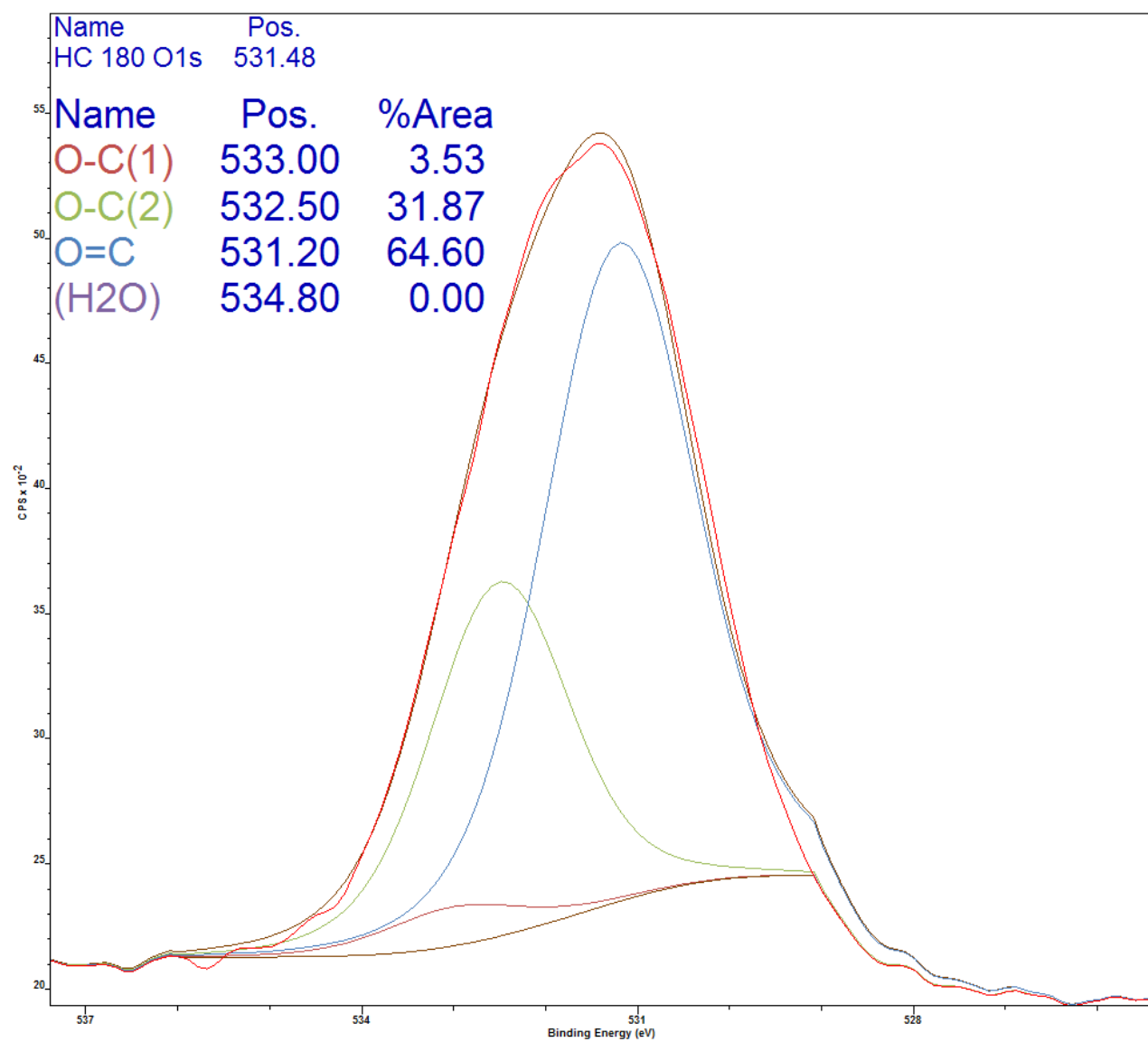
1 (b) Manure O 1s



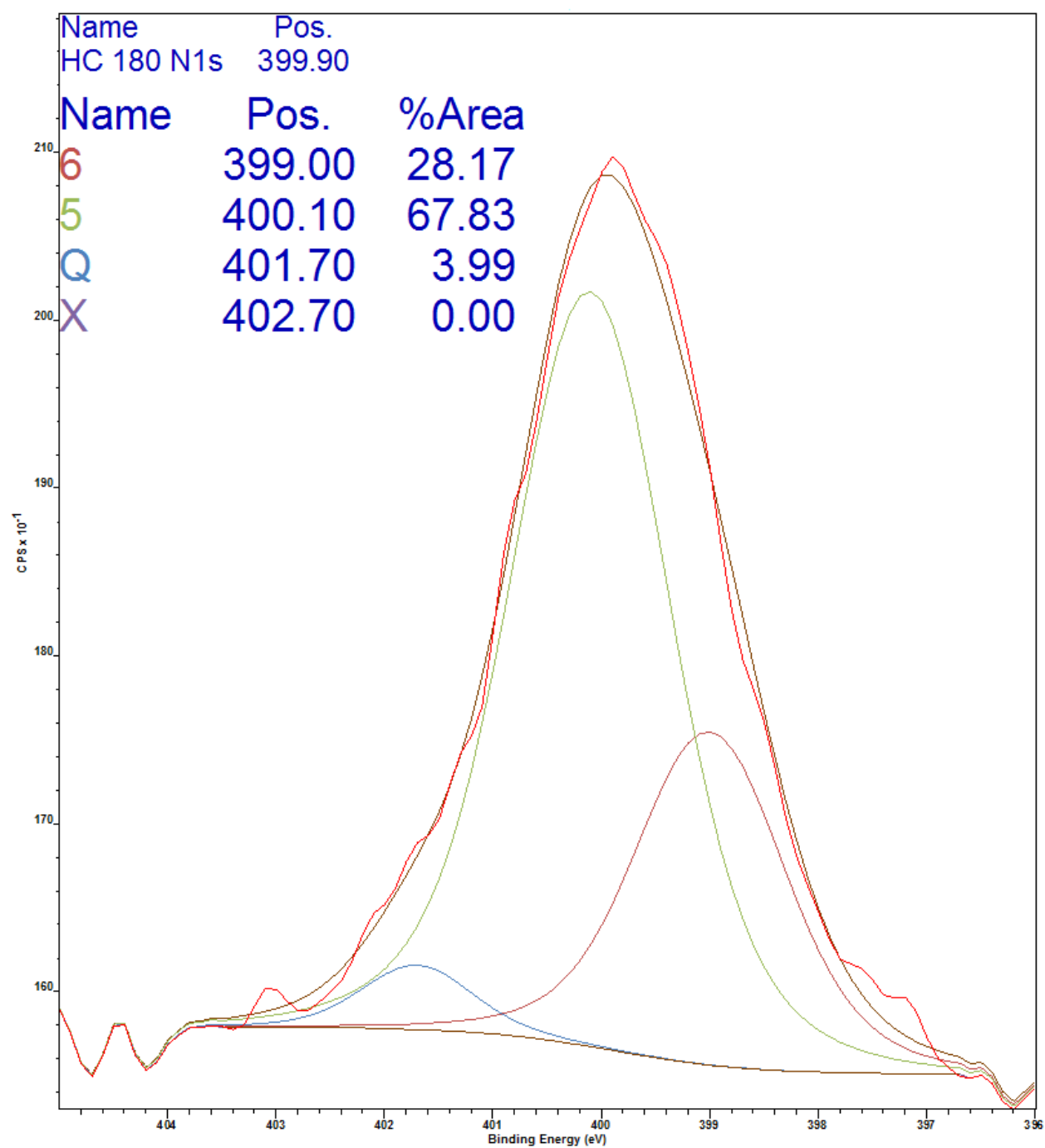
1 (c) Manure N 1s



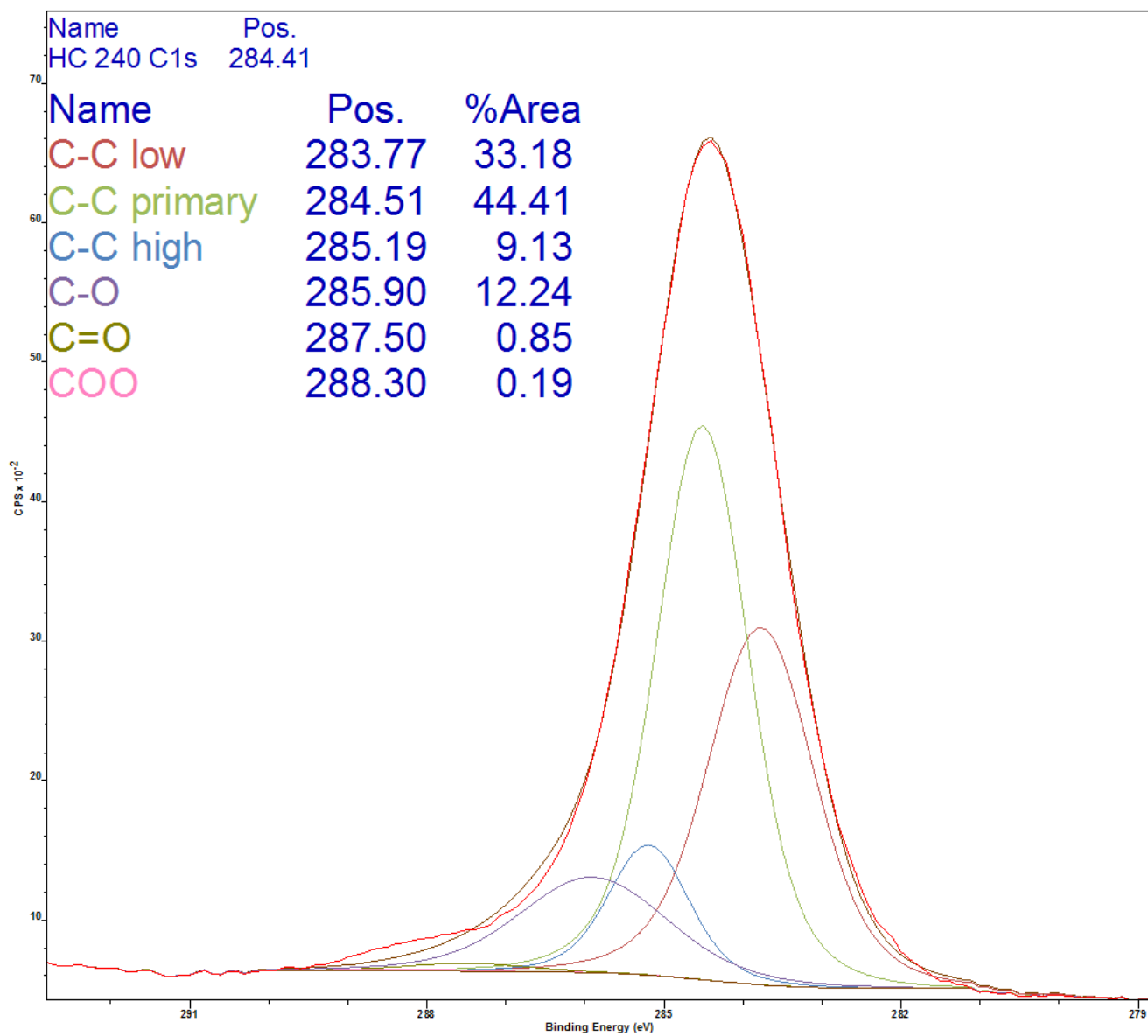
1 (d) HC-180 C 1s



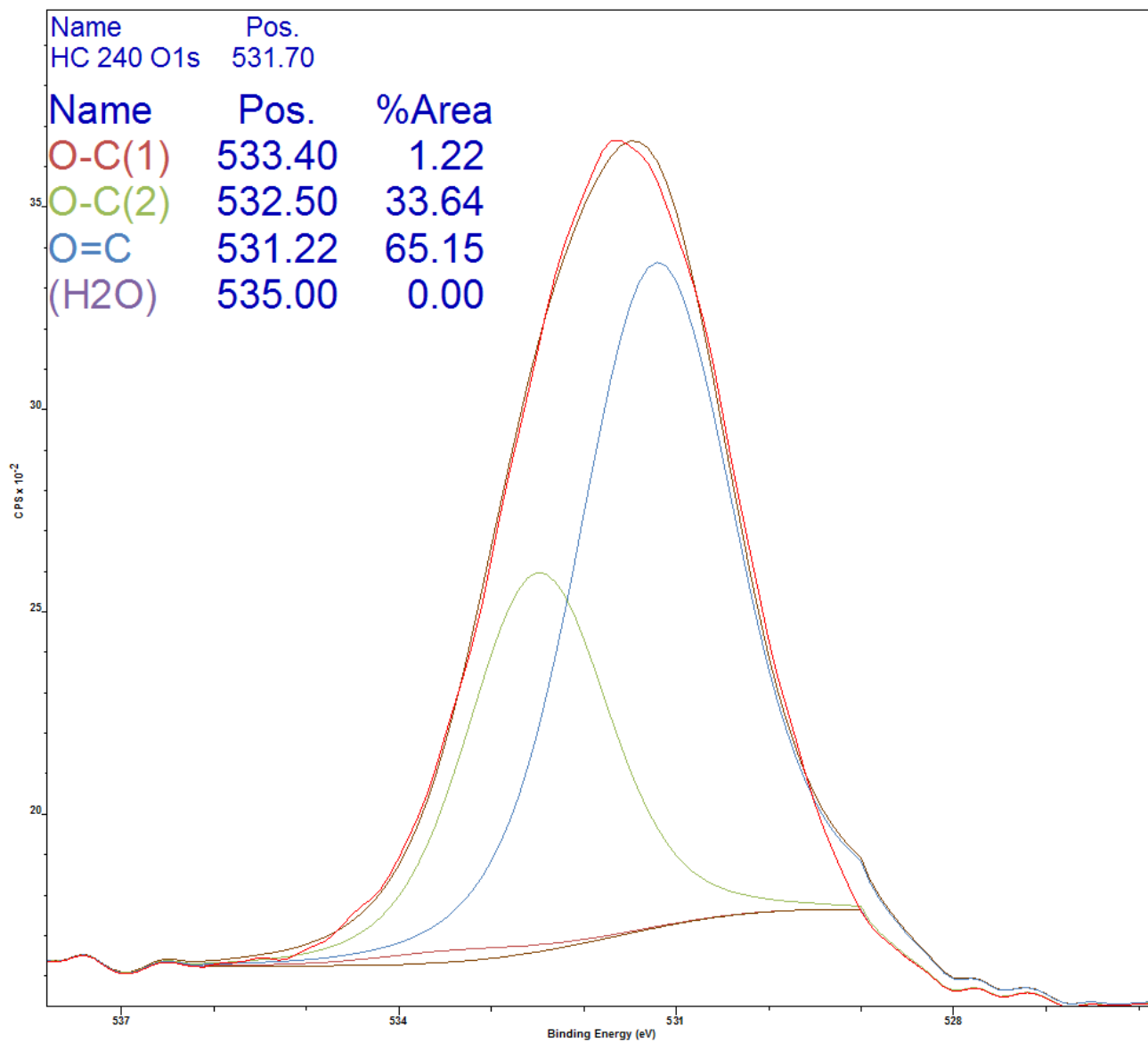
1 (e) HC-180 O 1s



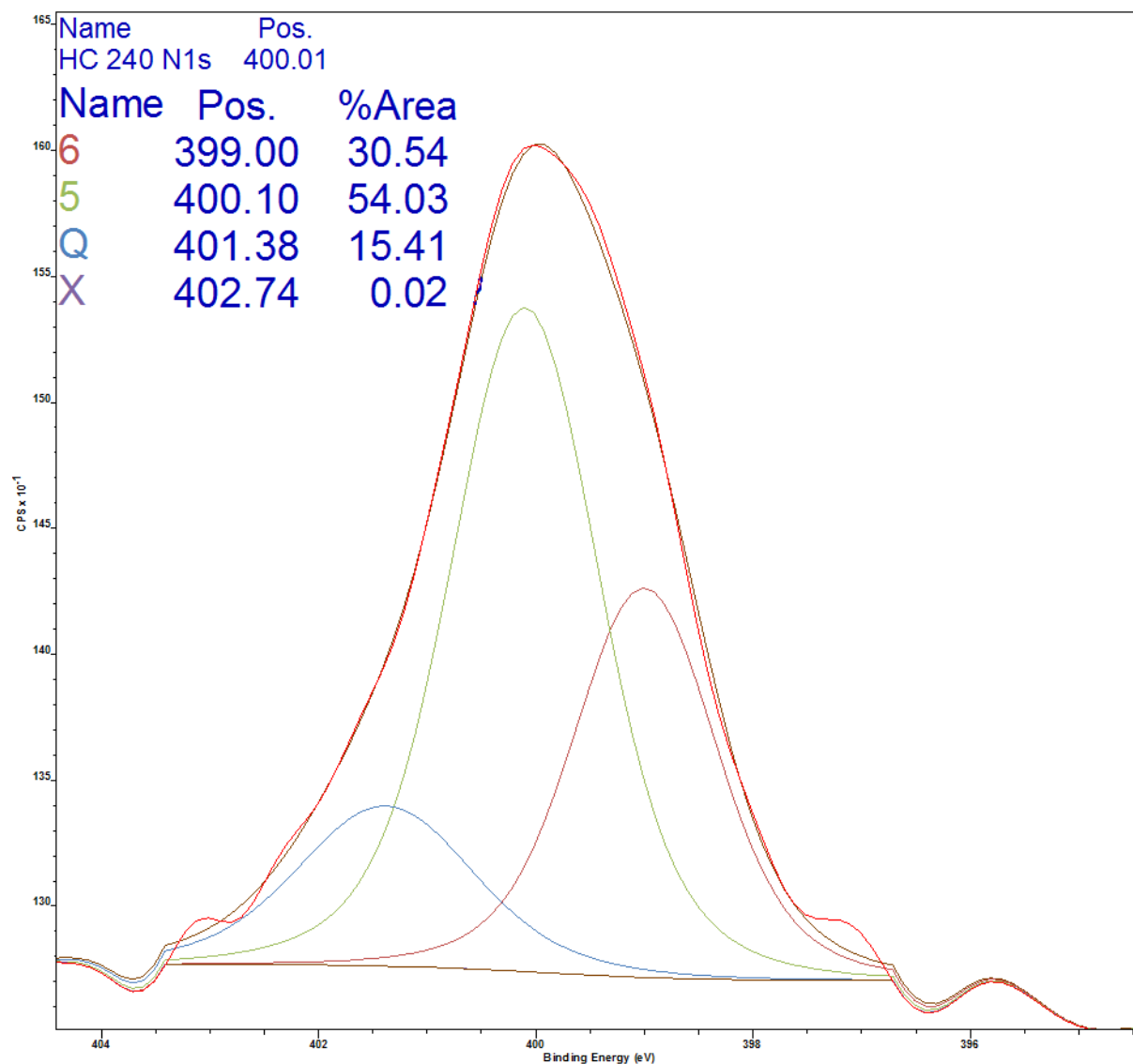
1 (f) HC-180 N 1s



1 (g) HC-240 C 1s



1 (h) HC-240 O 1s



1 (i) HC-240 N 1s

Supplementary Figure 1: Deconvoluted XPS plots of carbon, oxygen, and nitrogen for manure (a-c), hydrochars at 180 °C (d-f), and hydrochars at 240 °C (g-i).