Figure 4. For all three Bowland-Hodder samples, the N class was the most abundant class of organic compounds following the HC class. The N class represented 45% of compounds with relative abundances 10-50%, 32% for all compounds with relative abundances 0-10%, and Bowland-Hodder shale sample with relative abundance of ~5% for the Eagle Ford Texas shale sample. The N class was the most abundant class for the Colorado Green River shale sample, with relative abundance of 39%. The Bowland-Hodder shale samples had on average 16-17 DBE, whereas the Eagle Ford Texas shale had a lower 14-16 DBE. The Colorado Green River shale corresponded to compounds with a higher DBE > 20, whereas the Bowland-Hodder shale samples ranges from 14-16, with the Eagle Ford Texas shale sample represented by a lower average DBE of 7-11. The Colorado Green River shale was extracted with a lower average DBE of ~29, whereas the Bowland-Hodder shale samples in the other shale classes (S, C, O) were extracted with much higher average DBE (49-50). For all three Bowland-Hodder samples, the most abundant compounds were found between C18-C29, with an average of 20 carbon atoms per compound. The Eagle Ford Texas sample included relatively more higher DBE (~29) compounds, whereas the Eagle Ford shale included relatively more heavier molecular weight than the Bowland-Hodder shale samples.

The three most abundant classes of compounds in each of the three Bowland-Hodder samples were HC, N, and O classes, in decreasing order of abundance. Compared to previous analysis of this shale formation7, the Eagle Ford Texas sample included relatively more compounds in the N1 class than any other samples, with N1 relative abundance=27, followed by the HC class with ~9 relative abundance (Figure 3). For all three Bowland-Hodder samples, the most abundant compounds were found between C30-C45 in the Eagle Ford shale sample, with average DBE values 17-18 for the HC, N, and O classes, respectively. The Colorado Green River shale had the highest average DBE and low carbon numbers present in the Bowland-Hodder samples. This indicates the presence of polynuclear aromatics, which supports previous analysis of this shale formation. The Eagle Ford Texas shale sample corresponded to compounds with the S1 class is between C29-C32, with relative abundance of ~5.5 in the Eagle Ford Texas shale sample. The Colorado Green River shale contained the highest abundance of aromatics, with the S1 class second in relative abundance across all three Bowland-Hodder samples. The Eagles Ford shale sample included relatively more higher DBE (~29) compounds, whereas the Eagle Ford shale included relatively more heavier molecular weight than the Bowland-Hodder shale samples. The three most abundant classes of compounds in each of the three Bowland-Hodder samples were HC, N, and O classes, in decreasing order of abundance. Compared to previous analysis of this shale formation7, the Eagle Ford Texas sample included relatively more compounds in the N1 class than any other samples, with N1 relative abundance=27, followed by the HC class with ~9 relative abundance (Figure 3). 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