**Supplementary Table 1.** Table showing the stratigraphic distribution of *Neognathodus* specimens selected to test morphotype group affinities. Specimens were chosen between multiple stratigraphic boundaries. For example, to select the 30-specimen sample of N. bassleri, 27 N. bassleri specimens were chosen from the Perth Limestone Member, two were chosen from the Mecca Quarry Shale and Velpen Limestone members, and one was chosen from the Alum Cave Limestone Member. LS = limestone, SH = shale and Mbr = member. The number of specimens chosen from each unit is proportional to the total number of morphotype group occurrences in that unit.

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| **Stratigraphic Interval** | **IUPC Catalog Numbers** |
| West Franklin LS Mbr | 18,148-18,162; 18,203-18,207; 18,215-18,221 |
| Providence LS Mbr | 17,672-17,681; 17,705-17,712 |
| Alum Cave LS Mbr | 100,407-100,410; 100,430-100,450 |
| Mecca Quarry SH and Velpen LS mbrs | 21,116-21,127; 21,150-21,158 |
| Holland LS Mbr | 18,200-17,204; 18,208-18,214 |
| Perth LS Mbr | 18,940-18,957; 18,985-18,992 |