# Summary: Tutorial Example for Methylamine

This is a detailed outline of the output for Natural Bond Orbitals (NBO). The first segment in the output file will be a Natural Population Analysis (NPA). This takes into account three kinds of orbitals core, valence, and Rydberg. Core and valence electrons, or respectively, electrons that attracted by a single nucleus and those attracted by nucleus and core electrons make up the Natural Minimal Basis (NMB) which accounts for over 99 percent of the electrons associated with a molecule. The remaining less than one percent of electrons are Rydberg electrons which are attracted by the molecule as a whole which may be approximated as a point charge. Next, the breakdown of Lewis and non-Lewis orbital occupancy is provided; the values for Lewis orbital occupancy should be over 99 percent. The Natural Population Analysis (NPA) provides the partial charges on each atom in the molecule. The Natural Bond Orbital Analysis (NBOA) details bond hybridization and orbital occupancy in addition to noting whether a bond is one center, two center, Rydberg, etc. Natural Hybrid Orbital Analysis (NHO) provides the direction of a hybrid orbital given by the deviation angle. The Perturbation Theory Analysis estimates the interaction for bond and antibond orbitals by calculating the stabilization energy associated with delocalization.