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The observation of ultrahigh energy (UHE) neutrinos has become a priority in experimental astroparticle physics. UHE neutrinos can be detected with a variety of techniques. In particular, neutrinos can interact in the atmosphere (downward-going neutrinos) or in the Earth crust (Earth-skimming neutrinos), producing air showers that can be observed with arrays of detectors at the ground. With the Surface Detector Array of the Pierre Auger Observatory we can detect these types of cascades. The distinguishing signature for neutrino events is the presence of very inclined showers produced close to the ground (i.e. after having traversed a large amount of atmosphere). In this work we review the procedure and criteria established to search for UHE neutrinos in the data collected with the ground array of the Pierre Auger Observatory. This includes Earth-skimming as well as downward-going neutrinos. No neutrino candidates have been found, which allows us to place competitive limits to the diffuse flux of UHE neutrinos in the EeV range and above.

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