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**Adelaide Akers\*** ([ahqfgc@mail.missouri.edu](mailto:ahqfgc@mail.missouri.edu)), 202 Mathematical Sciences Building, University of Missouri-Columbia, Columbia, MO 65203. *Existence and symmetry of small-amplitude solitary water waves with discontinuous vorticity*. Preliminary report.

We consider a two-dimensional body of water with constant density which lies below a vacuum. The ocean bed is assumed to be impenetrable, while the boundary which separates the fluid and the vacuum is assumed to be a free boundary. Following the work of M.D. Groves and E. Wahlen (2008), we use the Hamiltonian structure of the system coupled with center manifold reduction techniques to establish the existence of small-amplitude solitary water waves with potentially discontinuous vorticity. Furthermore, we utilize a modified moving planes method to show that such solitary waves possess even symmetry. (Received September 12, 2016)