

Abstract Submitted  
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**Preparation of the MAX-lab LD2 Target** CODIE LEWIS, James Madison University, KURT HANSEN, MAX-lab, DAVID ELOFSON, Bridgewater State University, ERIN O'BRIEN, James Madison University, KELSEY BUGGELLI, NEVIN MILLER, KYLE O'CONNOR, GRANT O'RIELLY, University of Massachusetts Dartmouth, MAXTAGG COLLABORATION — Experiment E08-01 at MAX-lab is being conducted in order to provide data on the near-threshold cross-section for  $\pi^-$  photoproduction and high-energy nuclear Compton scattering. The experiment utilizes the MAX-lab Tagged Photon Facility and three large-volume NaI detectors to measure the high-energy gamma-rays produced from Compton scattering or from the capture of  $\pi^-$  events in the target. The goal is to obtain data on these processes from the neutron for comparison with various theoretical predictions. Since a free-neutron target is not available, a liquid deuterium target will be used. MAX-lab has such a target; however, it has not been operated since 2011. The integrity of the target vessel is of paramount importance to the experiment since any leaks could result in not only contaminated data, but also a safety risk. The procedure used for preparing the target vessel will be discussed. Preparation included positioning and testing temperature sensors, removing gas contaminants, and leak-testing the target vessel. After testing, a number of problems were found, the most serious of which is a leak in the cooling head. A future course of action will be prescribed with the intention of having the target ready for its use in the continuation of E08-01 scheduled for fall 2014

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