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Results from the Fermilab Liquid Argon Purity Demonstrator CHAD JOHNSON, Indiana University, LAPD TEAM — Liquid Argon Time Projection Chambers (TPCs) show promise for the large detectors needed for future long-baseline neutrino oscillation physics. The TPC detectors require ultra-pure liquid argon with respect to electronegative contaminants such as oxygen and water. This talk describes the 30 ton capacity Liquid Argon Purity Demonstrator (LAPD) constructed at Fermilab. LAPD is designed to show that sufficient purity for electron drift lifetimes of at least 3 ms can be achieved from a non-evacuated environment. Initial purification was achieved by exchanging several vessel volumes of clean, warm argon gas to push out ambient air and to dry out the vessel surfaces. The gas was then recirculated through a filtration system to achieve less than 1 ppm oxygen and water contamination. The vessel was then cooled and filled with LAr. The desired lifetime was achieved after 11 volume exchanges of LAr.

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