

Another Voice: West Valley remains safe for nuclear waste

By [Another Voice](#) | Published May 17, 2018

By Gordon Connally

The Sierra Club deliberately refers to the material underlying West Valley as “soil” to make it sound vulnerable. Scientists reserve that term for the uppermost zone that supports life. Geologically the subsurface at West Valley is subglacial meltout till with very, very low porosity. Any spill would seep underground at an exceptionally low rate, facilitating quick recapture.

Back in the late 1950s it became obvious that New York was going to produce significant energy from nuclear power. Thus, it would accumulate a lot of used nuclear fuel. We needed to find a place to reprocess and store that spent fuel. So the New York State Geological Survey began a comprehensive survey of the entire state.

By the early 1960s NYSGS had eliminated all but three possible sites. One site was in the Adirondack Mountains, a second in the Finger Lakes and a third at West Valley in the Cattaraugus Creek drainage basin. NYSGS contracted three geologists to analyze the sites. Professor Paul MacClintock of Princeton University was asked to examine the Adirondack site, Professor E. H. Muller of Syracuse University was asked to examine the West Valley site, while I was chosen for the Finger Lakes site. We each produced a written report and gave an illustrated oral presentation describing major advantages and prominent risks. We became de facto advocates for the sites we studied. But none were involved with the final selection. After careful consideration West Valley was chosen as the most appropriate site in the entire state. That led to a final, more detailed, study of West Valley by Professor R. G. LaFleur of Rensselaer Polytechnic Institute.

THE BUFFALO NEWS

West Valley was selected because of safety. The underlying glacial till is extremely “tight.” It was deposited by a glacier that may have been more than a mile thick. All porosity was squeezed out by the weight of the overlying ice. A basal layer of lodgement till was forced into and onto the bedrock as the south-flowing glacier moved up the south valley wall of Cattaraugus Creek. A critical factor is that this till rests directly on bedrock. There is no unstable material between the till and bedrock that could liquefy to produce catastrophic mudflows or avalanches.

I have absolutely no worries about West Valley. The “soil” has resisted erosion for at least 15,000 years. It withstood periglacial and boreal climates as the glacier receded. It has withstood at least 1,000 hundred-year floods, and perhaps a dozen thousand-year floods. There is no reason to anticipate that this will change in the future. In my opinion it was an excellent choice then and remains so today. The nuclear waste stored there poses less of a threat than it would in transit to some other site.

Gordon Connally, Ph.D., taught geology at several colleges, including UB, had his own geological consulting company, and was a research associate of the New York State Museum. In 2005, he was awarded the John Mason Clarke medal for distinguished service to the NYSGS.