



Michigan Basin Geological Society

September 2021

Membership Meeting

Who: Sara Hayes, Graduate Student, Western Michigan University

What: Using Mercury to Evaluate the Niagara-Salina Transition, Silurian Michigan Basin, USA

When: September 8th, 7:00 PM, 2021

Cost: Free to members

Where: Virtual

Join Zoom Meeting: <https://us06web.zoom.us/j/82682557674?pwd=VG1YaXVRRHpgSG4xdzlwL2dlQkVmdz09>

Meeting ID: 826 8255 7674

Passcode: YQ4ZtD

Abstract: This study evaluates the Michigan Basin (MB) during the Niagara-Salina transition with sedimentary mercury (Hg) as a possible proxy for volcanism and biogeochemical perturbations. The Niagara-Salina transition is marked by an environmental change from a carbonate reef to an evaporitic environment, though currently the cause is unknown. Previous research has suggested the change was due to local conditions cutting off water access to the basin. Research into the carbon isotope record found several global CIEs, suggesting the cause maybe global. Mercury as a proxy is equally contested as a sign of global volcanism, and though the present interpretation of high mercury concentrations [Hg] is often volcanism, other sources such as terrestrial input, can also create a high [Hg]. Our research presents evidence Hg is possible to measure in evaporites, and is not a reliable proxy for paleovolcanism, as well new isotopic data that supports the possibility of plants in the Silurian.



Bio: Sara Hayes is currently a graduate student at Western Michigan University working in the Carbonate Petrology and Characterization Laboratory under Dr. Steve Kaczmarek. She is conducting research on mercury in Silurian paleoenvironments from the St. Kalkaska Core #2-15 at the Michigan Geology Repository for Research and Education. Sara is also a Research Assistant at the Michigan Geological Survey as part of the Triage Project. Before Western, she studied at Oakland University and earned a Bachelor of Science in Chemistry. At Oakland University, she worked in the Water Quality lab under Dr. Linda Schweitzer studying silica content in ash water.

<https://www.mbgs.org>