



UNIVERSITY OF
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February 20, 2023

Georgia EPD and Interested Parties

Re: Appropriate streamflow data for assessing how the proposed TPM LLC mine groundwater withdrawals will affect Okefenokee Swamp Hydrology

We, the undersigned research hydrologists of southeastern universities, find that the appropriate USGS gage for assessing hydrologic effects on the Okefenokee Swamp of consumptive groundwater withdrawals by the proposed TPM LLC mineral sands mine is gage #02228500, North Prong of the St Marys River at Moniac, GA. Further, we find gage #02231000, St Marys River near Macclenny, FL, chosen by GA EPD, is inappropriate for such analysis.


The salient hydrologic question about the mine is the degree to which it will alter the hydrology and associated ecosystem benefits of the southeastern portion of the Okefenokee Swamp. The North Prong of the St Marys at Moniac exclusively drains the southeastern portion of the swamp plus its contributing areas from Trail Ridge, and previous research has demonstrated very high correlations between flows at this gage and swamp water levels monitored by the USFWS. The geographic position of this gage is ideal for analyzing potential effects to swamp hydrology of consumptive ground water withdrawals beneath Trail Ridge.

Conversely, the data from the USGS gage at Macclenny, FL are inappropriate for direct analysis of how consumptive groundwater withdrawals by the mine will affect the hydrology of the swamp. The Macclenny gage drains a basin that is 4.4 times larger than the Moniac gage. Three-quarters of the area draining to this gage is in relative highlands of north central Florida. The hydrologic inputs to this basin and the hydrologic behavior of this basin are in no way similar to that of the southeastern portion of the Okefenokee Swamp. Furthermore, the sheer size of the basin and its flows at this gage will mask the effects a fixed withdrawal would have where the river exits the swamp.

Conclusions drawn from consumptive flow removal from the Macclenny, FL gage data cannot be applied to the question of how the Trail Ridge groundwater withdrawals will affect the swamp. To assess this question, it is necessary to use flow data from the Moniac gage.

We thank you for your attention to this important matter. We know you agree it is critical to apply the best possible data to this resource management decision affecting Georgia.

Sincerely,

A handwritten signature in blue ink, appearing to read "Rhett Jackson", with a long, sweeping underline.

Signing for:

C. Rhett Jackson, John Porter Stevens Distinguished Professor of Water Resources, Warnell School of Forestry and Natural Resources, University of Georgia

Larry Band, Ernest H. Ern Professor of Environmental Science, School of Engineering, University of Virginia

Stephen Schoenholtz, Director and Professor, Virginia Water Resources Research Center, Virginia Tech University

Kevin McGuire, Professor of Hydrology, College of Natural Resources and Environment, Virginia Tech University

Daniel L. McLaughlin, Associate Professor of Hydrology, Department of Forest Resources & Environmental Conservation, Virginia Tech University

Diego Riveros-Iregui, Associate Professor of Watershed Hydrology, Department of Geography, University of North Carolina at Chapel Hill

Ryan Emanuel, Associate Professor of Hydrology, Nicholas School of the Environment, Duke University

Matt Cohen, Professor of Water Resources, School of Forest, Fisheries and Geomatics Sciences, University of Florida

Courtney Siegert, Associate Professor of Hydrology, College of Forest Resources, Mississippi State University

Luke Pangle, Associate Professor of Hydrology, Dept. of Geosciences, Georgia State University

Todd Rasmussen, Professor of Hydrology, Warnell School of Forestry and Natural Resources, University of Georgia