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Via email: [twinpines.comment@dnr.ga.gov](mailto:twinpines.comment@dnr.ga.gov)

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\*Executive Committee Member

RE: Comments on the Draft Mining Land Use Plan (Draft Plan) submitted by Twin Pines Minerals, LLC

Director Dunn:

On behalf of the Georgia Conservancy, I am providing the following comments on Twin Pine Minerals, LLC's (TPM) mining permit application and Draft Mining Land Use Plan (Draft Plan). The conservation, protection, and enjoyment of the Okefenokee National Wildlife Refuge for the people of Georgia has been a top priority for the Georgia Conservancy throughout its entire 56-year history. We are a statewide conservation organization that works to develop solutions to protect Georgia's natural resources through advocacy, engagement, and collaboration on conservation issues.

The Okefenokee Swamp and National Wildlife Refuge provides a safe haven for thousands of species of plants and animals, including many that are threatened or endangered. In addition, the Okefenokee National Wildlife Refuge functions as an international destination for boating, fishing, birding, and research and serves as an unmatched location for wonder, spiritual renewal, and solitude for its 650,000+ visits per year. The Okefenokee Swamp is the economic engine that supports a \$53 million eco-tourism industry and the associated 825 long-term, sustainable jobs, while simultaneously providing invaluable ecosystem services such as water quality protection and carbon sequestration.

The concerns and issues expressed in this letter focus on three vital Georgian landscape features that are vulnerable to negative impacts from TPM's proposed mining operations.

**1. Trail Ridge:** This low, saturated sand ridge plays a significant role in the hydrogeology of this area of Georgia, acting as a sill for the eastern side of the vast Okefenokee Swamp. Trail Ridge is not only ecologically important in and of itself, but also serves as scaffolding for the health of the Okefenokee.

**2. Okefenokee National Wildlife Refuge:** One-third of the mining site drains to streams in the Okefenokee Swamp, one of Georgia's most precious ecological sites, a United Nations Ramsar Convention "Wetland of International Importance", and the largest blackwater swamp in North America. The Okefenokee's biodiverse ecosystem is home to the headwaters of two notable rivers, the Suwannee and St. Marys, and contains nearly 400,000 acres of federally-designated wilderness. Stephen C. Foster State Park, located within the Okefenokee National Wildlife Refuge, is a Gold-Tier International Dark Sky Park and National Natural Landmark. With its opportunities for boating, birding, fishing, photography, adventure, research, and nearby hunting, the Okefenokee National Wildlife Refuge (NWR) provides more economic benefit to Georgia and Florida than any other NWR.

**3. St. Marys River:** The Twin Pines property is located between the river headwaters (River Styx drainage) in the Okefenokee and the main stem of the river to the west (Boone Creek drainage). The 120-mile long St. Marys River is a blackwater stream ecosystem and home to several threatened and endangered species. The North Prong of the St. Marys River (from the headwaters to Cedar Creek) is listed as impaired for dissolved oxygen (DO). Concerns for this river are that it could be impacted by changes in water quality and quantity caused by mining, including further reduction of DO levels, alterations to pH, and turbidity. In fact, the St. Marys River has been designated as one of "America's Most Endangered Rivers" by American Rivers, specifically because of TPM's mining application.

While the reasons for protecting the Okefenokee Swamp are myriad, and the desire to value and protect this unique natural resource has been clearly expressed through the 160,000+ comments received by the State, our comments included here will focus specifically on concerns with TPM's Draft Plan and its inability to meet the minimum standards set by the Rules for Surface Mining.

### **Mitigation Requirement**

Section 391-3-3-.05 (2) of the Georgia Rules and Regulations for Surface Mining states: "*The plan will contain a specific plan of action, being based on sound engineering and conservation principles, for accomplishing the operator's reclamation objective and for protection of adjacent watersheds from effects of erosion and siltation.*"

*Where a mining site is to be located on lands or adjacent to lands containing natural or other resources which may be adversely affected by the mining operation, the mining operator shall include as an attachment to the Mining Land Use Plan, a plan to alleviate and/or mitigate adverse effects of such impacts."*

TPM has failed to provide sufficient evidence in the Draft Plan that its proposed operation will not adversely affect the hydrology or wildlife of the Okefenokee Swamp or the St. Marys River, nor has an acceptable plan for mitigation been provided, if impacts result from mining operations. Furthermore, the water level and quality monitoring plan proposed is insufficient to identify or address any water quality or quantity impacts resulting from mining operations.

1. Hydrologic Impacts

The proposed dewatering mining pit will result in the loss of 1.128 million gallons per day (MGD) from the Okefenokee Swamp and the St Marys River. Analysis performed by experts in the field of hydrology, most notably, C. Rhett Jackson, Ph.D. (John Porter Stevens Distinguished Professor of Water Resources at the Warnell School of Forestry and Natural Resources, University of Georgia) has demonstrated that this dewatering will result in a tripling of the number of zero flow days for the upper St. Marys River, which will undoubtedly affect its dissolved oxygen content, for which it is currently listed as impaired by Georgia EPD. This dewatering will also result in the tripling of severe drought conditions within the Okefenokee, which will affect the fire regime leading to more frequent and severe fires and a reduction in the number of days where water levels in the swamp are sufficient for boating. These conditions will obviously have a significant impact on local communities through a reduction in tourism dollars and negative frontline community health impacts related to poor air quality during the fire season.

2. Sand Ridge Hydrologic Barrier Impacts

As stated earlier, Trail Ridge functions as a hydrologic “dam”, which resulted in the creation of the Okefenokee Swamp. Trail Ridge contains heterogeneous layers and lenses of unconsolidated sands, partly consolidated sands, consolidated black sands, and clays. Each of these layers has different hydraulic properties that affect groundwater flow and the position of the surficial water table under Trail Ridge. Twin Pines proposes to mine these sands and then replace them with a homogeneous layer of mixed materials. Replacing this layered system with a uniform mixture of disturbed materials will likely increase the rate at which groundwater can flow through the ridge, resulting in further dewatering of the Okefenokee and permanently lowering water levels in the Swamp. TPM’s proposal to mitigate the impacts of homogenizing the sedimentary layers of the trail ridge through application of a continuous bentonite layer to mimic natural hydrologic conditions will be difficult to execute, and “unlikely to work as intended”, based on analysis by Dr. Rhett Jackson.

3. Floridan Aquifer Impacts

There is also concern regarding the impact to the Floridan Aquifer from this proposed plan. The Floridan Aquifer supplies drinking water for nearly 10 million people from Alabama to South Carolina. It is the primary and, in many cases, the only drinking water source for the people of Coastal Georgia and North Florida. This plan proposes to pump 0.43 MGD of Floridan Aquifer water for process water. In addition, the Okefenokee Swamp is a known recharge location for this precious aquifer. To allow a mining operation that risks impacts to our pristine drinking water supply does not appear to be good stewardship of our resources.

4. Water Level and Quality Monitoring and Mitigation

The Groundwater and Surface Water Monitoring Plan provided on pages 11 and 12 of the Draft Plan is insufficient to adequately monitor and identify impacts, and even slower to react to impacts that are identified through monitoring. Furthermore, it is entirely unclear how any impacts would be mitigated once identified.

The plan states that ground and surface water level measurements will be recorded daily, but only downloaded and evaluated on a monthly basis, and that this frequency can be increased or decreased “as needed” during the life of the mine. There is no further statement as to what would necessitate a change in monitoring frequency, nor is there a statement that Twin Pines would get EPD approval of such a change prior to initiating it, as is required in the Rules for Surface Mining. In addition, if post-mining groundwater monitoring doesn’t meet established conditions (as determined by TPM), then this plan allows TPM an additional 20 days to report it to EPD. This timing could result in a delay of up to 50 days before any report of observed impacts to surface or groundwater was made to EPD. After the report is submitted to EPD, the Draft Plan allows TPM the opportunity to conduct an “analysis” to eliminate any other potential causes for groundwater fluctuations. If no other source of impacts can be implicated, TPM would then be required to “conduct further investigations to determine the causes and potential solutions (if any exist.)” There is no timeframe given or required for this process to identify and mitigate impacts and for adaptive management to begin, let alone a requirement or commitment for water levels to be restored, meaning that impacts to groundwater and surface water levels could be impacted indefinitely and there would be no recourse by which EPD could require action from TPM.

Prevailing industry best practices would indicate that a robust surface water quality monitoring program is warranted for any industrial mining operation, particularly for one which drains into the St. Marys River, a 303(d) listed waterway with a DO impairment. However, the surface water quality monitoring plan as presented in the Draft Plan includes only three (3) surface water quality monitoring locations on tributaries draining east to Boone Creek, and zero (0) surface water quality monitoring locations on any drainage west towards the River Styx. In addition, monitoring is proposed only quarterly during mining operations, with reporting to EPD on an annual basis after the first year of operation. The Draft Plan also fails to describe how the data will be evaluated or against what specific standards data will be compared, nor does this Draft Plan provide water quality benchmarks, the exceedance of which would result in suspension of mining operations. This water quality monitoring plan is grossly insufficient to identify impacts and implement solutions in a reasonable timeframe so as to reduce potential damage to local water resources.

#### 5. Wildlife Impacts

While disturbance of the sand ridge will certainly alter the groundwater hydrology, permanently impacting water levels, fire regime, critical habitat and public use of the Okefenokee Swamp, it directly destroys critical habitat along Trail Ridge itself. On the demonstration project site, execution of a mining plan on this site will lead to habitat reduction and fragmentation on the unique Trail Ridge sands for the gopher tortoise (*Gopherus polyphemus*), a keystone species, along with other notable species that depend on the tortoise, including the eastern indigo snake (*Drymarchon couperi*) and gopher frog (*Lithobates capito*). As recently as October 2022, the Georgia DNR celebrated the success of the Gopher Tortoise Land Conservation Initiative in protecting habitat and preventing the listing of the gopher tortoise in Georgia. Now just five months later the Georgia EPD is considering permitting a mining project that will destroy known gopher tortoise habitat.

In addition, degradation of water quality and quantity necessary to sustain fish populations in the St. Marys River is a real concern. Both the Shortnose sturgeon (*Acipenser brevirostrum*) and Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) are present in the St. Marys River. Sturgeon use freshwater rivers such as the St. Marys to spawn and as juvenile habitat. Under the Endangered Species Act, both species are “Endangered throughout its range.” The St. Marys River is designated a Critical Habitat for the Atlantic Sturgeon. The State Wildlife Action Plan (SWAP) has also identified the St. Marys as a high priority watershed.

### **Local Land Use Consistency**

Section 391-3-3-.05 (2) of the Georgia Rules and Regulations for Surface Mining states: *“The Mining Land Use Plan shall be consistent with land use in the area of the mine.”*

The Georgia Planning Act states: *“The natural resources, environment, and vital areas of the state are also of vital importance to the state and its citizens. The state has an essential public interest in establishing minimum standards for land use in order to protect and preserve its natural resources, environment, and vital areas.”*

In the absence of zoning, which Charlton County has not yet adopted, the legal policy document that identifies current land use and guides future land use decisions for local governments in Georgia is the Comprehensive Plan, which must meet the minimum standard of the Georgia Planning Act and the Rules for Comprehensive Planning, and also includes public engagement in the planning process. Charlton County completed a joint Comprehensive Plan with the towns of Folkston and Homewood in 2020. It was adopted by Charlton County in a public meeting on October 15, 2020.

The Charlton County Joint Comprehensive Plan features the Okefenokee Swamp as a local driver for jobs, eco-tourism economy development, attracting new residents, and providing quality of life for existing residents. As such, protection of this important resources features heavily in the plan. Two of the main goals in the Comprehensive Plan that are designed to guide land use policy decisions specifically discuss the importance of the Okefenokee Swamp and the need to protect it.

- Goal 1: “Improve the greater Charlton County economy by diversifying and establishing an economic and cultural climate that will allow the County to become a regional center for **eco-tourism** and other coastal area-oriented businesses.”
- Goal 3: “Protect, appropriately use, or conserve the natural resources of the County, notably the Okefenokee National Wildlife Refuge and Rivers, to maximize their functions and values in a sustainable manner for perpetuity.”

The plan also specifically identified a lack of coordination and cooperation between State and Federal agencies to market the Okefenokee National Wildlife Refuge. It is disappointing that, despite this clearly identified need for State and Federal assistance to support a local eco-

tourism industry based around the Okefenokee Swamp, the State is now considering issuing a permit that would put the local eco-tourism economy at risk.

In a local government that has not yet adopted a Zoning Ordinance, the Character Areas adopted as part of the Comprehensive Plan are designed to guide future land use decisions. The currently proposed location of the TPM demonstration mine straddles Mixed-Use Transition and Mixed-Use Preferred Development Character Areas.

Mixed-Use Transition: This character area is designed to protect the rural, agricultural, and forestry land use through use of conservation easements to protect environmentally-sensitive areas. The plan recommends consideration that proposed uses are appropriate and compatible with natural and cultural uses surrounding them.

Mixed-Use Preferred Development: This character areas allows for mixed-use development but advises that land development standards steer development and economic growth where Charlton County would like to see it and to limit any potential negative environmental impacts. The stated goal in this area is to provide for compatible development, market the County as a bedroom community to Jacksonville, and preserve a rural quality of life in the midst of the County's close proximity to a major metropolitan area.

It goes without saying that a heavy industrial strip mine is incompatible with rural, agricultural and forestry land uses and certainly inconsistent with a bedroom community with a rural quality of life. We believe that issuing such a permit would be in direct conflict with the Rules for Surface Mining because of the clear lack of consistency with the State-approved Comprehensive Plan.

## Closing

Georgians are extremely proud of this international wonder in our own backyard, which is shortlisted to become a UNESCO World Heritage Site. A September 2022 poll conducted by Mason-Dixon Polling showed that more than 70% of Georgia voters, including 75% of South Georgia voters, oppose mining next to the Okefenokee Swamp. Local, state, and federal officials from both sides of the aisle, as well as scientists and faith leaders, have spoken out in support of the Okefenokee as well. In a November 2022 letter to Governor Brian Kemp, U.S. Secretary of the Interior Deb Haaland stated, "The proposed mining activity in this area poses an unacceptable risk to the long-term hydrology and future of the swamp ecosystem and these cultural values...I strongly recommend that the State of Georgia not move ahead with approval for this proposed mine in order to ensure that the swamp and refuge are appropriately protected." Okefenokee National Wildlife Refuge Manager Michael Lusk, in addition to U.S. Fish and Wildlife Service Directors from the Nixon, Ford, Carter, Bush, and Clinton administrations, have all expressed concerns about the mine and/or called on the State to reject the permit. As a previous Secretary of the Interior, Bruce Babbitt, stated upon the withdrawal of an earlier DuPont mining proposal on Trail Ridge, "**Titanium is a common mineral, but the Okefenokee is a very uncommon swamp.**"

Due to its lack of compliance with the Rules for Surface Mining, and because of the obvious threat that mining poses to one of Georgia's most unique and valuable natural resources, the Georgia Conservancy respectfully requests that the Georgia Environmental Protection Division reject the Draft Mining Land Use Plan and deny the Surface Mining Permit. We appreciate the opportunity to provide comments on this Draft Plan and for your consideration of the information provided herein.

Respectfully,

THE GEORGIA CONSERVANCY

A handwritten signature in cursive script, appearing to read "Katherine Moore".

Katherine Moore  
President

A handwritten signature in cursive script, appearing to read "Courtney Reich".

Courtney Reich, AICP, CFM  
Coastal Director