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Ms. Holly Ross
U.S. Army Corps of Engineers
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Albany, Georgia, 31707

Via email: CESAS-SpecialProjects@usace.army.mil

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RE: Comment Letter, Georgia Conservancy
March 2020, Permit Application No. SAS-2018-00554
Twin Pines Site, Charlton County, Georgia

Dear Ms. Ross,

The Georgia Conservancy is pleased to provide this comment letter to the U.S. Army Corps of Engineers (USACE) for the revised Twin Pines Minerals, LLC (“Twin Pines”) heavy minerals mine permit application number SAS-2018-00554. The site is located on Trail Ridge in Charlton County, Georgia, east of the Okefenokee National Wildlife Refuge and west of the community of Saint George.

The comments below address the revised scope described in the Twin Pines, March USACE 2020 application (“USACE application”). There are also comments related to other information submitted by Twin Pines to the USACE, including “Impact of the Proposed Twin Pines Mine on the Trail Ridge Hydrologic System” (“hydrogeology study”), dated January 2020.

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 53-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 concerns and issues expressed in this letter focus on three vital landscape features that are susceptible to spillover effects/negative consequences from mining on the 12,000 acres controlled by Twin Pines:

- **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 also a critical fixture/component within Georgia’s State Wildlife Action Plan (SWAP), as it provides a vital ecological link northward from Florida to the Altamaha River.
- **Okefenokee National Wildlife Refuge:** One-third of the mining site drains to streams in the Okefenokee basin, one of Georgia’s most precious ecological sites and a Ramsar-recognized treasure. The Okefenokee’s 438,000-acre biodiverse ecosystem is home to the headwaters of two notable rivers, the Suwannee and the St. Marys, and contains nearly 353,981 acres of federally-designated wilderness. Stephen C. Foster State Park, located within the Okefenokee National Wildlife Refuge, was recently designated a Gold-tier International Dark Sky Park.

- **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 is a blackwater stream ecosystem and home to several threatened and endangered species. Concerns for this river are that it could be impacted by changes in water quality and quantity caused by mining, including alterations to the pH and turbidity.

Is this Project Segmentation/ Piecemeal Analysis?

This project is the first phase (“demonstration”) of an overall plan to mine adjacent tracts to the north. The applicant has made it clear that this permit area is part of a larger project, which will be permitted in subsequent phases. The application does not address the cumulative effects of mining on the overall 12,000 acres, which must be considered in this USACE action. For that reason, Georgia Conservancy urges the consideration of many salient questions related to the Twin Pines USACE application, including the following:

- Is it appropriate that the wetland impact alternatives analysis for this application includes tracts controlled by Twin Pines that they intend to mine in the future?
- How does this 848 acre “demonstration project” fit in the context of the 12,000 acres that Twin Pines controls, which will see development of future phases of the overall mining plan?
- How will the cumulative effects of the mining on the other Twin Pines tracts be included in the environmental assessment (EA)?
- Will USACE hold public meetings related to this permit application locally?
- Will the EA by the USACE include independent review of the Twin Pines MODFLOW 2005 models?

Concerns Related to Technical Operations and Impacts from Mine Operations/ Processes

The application outlines a plan to excavate an average of 50 feet below the land surface, sort the material with a wet mill, and backfill in a 24-hour per day operation. The process exposes approximately 25-40 acres of ground per month. Much of the area near Trail Ridge possesses groundwater within two feet of the ground surface, and the site is no exception. Within the geohydrology study, a model for the existing Trail Ridge groundwater conditions, as well as changes to groundwater flow from mining operations lower the groundwater table, impacting Trail Ridge wetlands. This study also has the stated intent of assessing potential impacts that mining operations and soil homogenization on the water level of the Okefenokee.

While the revised USACE application has additional technical data that provides helpful insights, it is lacking in related operational and performance-related information.

Page 14 of the USACE application (section entitled: “Vertical Hydraulic Conductivity Analysis of Post-Processed Sands”) describes bench scale process and testing procedures to establish vertical conductivity on post-processed sands. In the geohydrology study (Holt, et al) there is significant reliance on these tests to achieve the post-mining homogenized soil property; however, the application is missing related operational/process practices that will achieve the vertical conductivity and other properties that maintain the integrity of existing groundwater hydrology on Trail Ridge.

- The post-mining groundwater model summarized on USACE application page 14, as well as the description of the post-processing backfill (geohydrology study page 7) describe

the same uniform vertical hydraulic conductivity (1.0E-03 cm/s), but there is no mention of how this is to be achieved/conducted operationally.

The USACE application page 14 states, “The study also indicated that a mixture of approximately 10% to 12.5% bentonite would be required to achieve a relative permeability similar to the results calculated for the black humate-cemented consolidated sand in the two samples from PZ57D (Table 9)”.

As mentioned above, on page 7 of the hydrogeology study (section entitled: Comparison of the Pre-Mining and Post-Mining Model Results), a uniform vertical hydraulic conductivity figure was used.

- What is the sensitivity related to using this one variable for vertical conductivity over a wide area of backfilled mined material in the post mining model? Only two samples were taken for a project that covers over 800 acres. Will more samples and analysis be performed?
- Has an operational plan been developed that incorporates the results of this analysis?
- How will such practices be mandated under USACE permit conditions? How will the planned operations and the related adaptive management of such a modification to post-processing of sands be incorporated into permit requirements?

Potential Impacts on Streams, Wetlands, Wildlife, and Local Economies

Georgia Conservancy is concerned by the lack of information and/or plans within the USACE application and the hydrogeology study to mitigate impacts on streams, wetlands, and wildlife, or to correct for negative impacts that may occur.

The limited detail provided in the mining plan shows the draglines moving back and forth (east-west) in the active mining area, requiring reconstruction of impacted streams and wetlands. The permit application lacks the stream and wetlands reconstruction details which explain the means and methods employed for streams and wetlands reconstruction (biotic and abiotic).

The mining plan shows the stream and wetland impacts are aggressive and on a significant scale. On the project site, 478 acres of 898 acres are wetlands (USACE application page 52), which is roughly the same percentage of wetlands shown in the previous Twin Pines submittal in July 2019. Thus, many of the above comments are due to the execution of a mining plan that will lead to habitat reduction and fragmentation on the unique Trail Ridge sands. Georgia Conservancy is concerned that the proposed mining operations along Trail Ridge may adversely impact wildlife habitat within and nearby the site.

These potential impacts include:

- The cumulative loss of habitat for the gopher tortoise, a keystone species listed as threatened by the State, along with other notable species that depend on the tortoise (*Gopherus polyphemus*), including the eastern indigo snake (*Drymarchon couperi*) and gopher frog (*Lithobates capito*).
- Changes in fire frequency and intensity as a result of groundwater alternations. During the last ten years, there have been two major fires in the area of this site. Thus, there is significant concern related to fire management in and around the Okefenokee.
- Degradation of water quality and quantity necessary to sustain fish populations in the St. Marys River. 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 SWAP has also identified the St. Marys as a high priority watershed.

More than 600,000 visitors per year visit the Okefenokee National Wildlife Refuge and its surrounding State and local parks. The combination of noise, light, and other impacts for wildlife and visitors to the area from mining on this site is of significant concern. The Okefenokee is essential to the economy of Charlton and nearby counties. The citizens of the area should have a chance to learn more and discuss the impacts.

This is a very large permit submittal and the stakeholders need adequate time to review the application and related studies. In addition, all of us have been impacted to some extent by COVID-19 and disruptions to normal work and life routines. Providing sufficient time to review and comment on this application is especially important because we anticipate that the application is based in part on extensive modeling data. It will take time for the public to review and interpret this data. We therefore request that the Corps extend the public comment period for at least an additional ninety (90) days, for a total of one hundred twenty (120) days to review the proposal.

The application still lacks essential information from the applicant. The Okefenokee Swamp is a unique ecosystem and Trail Ridge is an integral component within it. Given that nearby mining could impose significant impacts on this ecological treasure, the Georgia Conservancy respectfully requests the development of a full Environmental Impact Statement (EIS) to assess cumulative impacts from all future phases of mining, over the entire Twin Pines-controlled property (12,000 acres).

Thank you for your consideration of these comments. Please let me know if you have any questions or need any information.

Sincerely,

A handwritten signature in blue ink, appearing to read "Charles H. McMillan, III". The signature is stylized and includes a small mark at the end that resembles a hash symbol (#).

Charles H. McMillan, III
Natural Resource Director
The Georgia Conservancy, Inc.

cc: Bart Gobeil, President, Georgia Conservancy, Inc.