

28 October 2022

Kate Betsill
Safe Dams Program
Georgia Department of Natural Resources
2 Martin Luther King, Jr. Drive
Atlanta, Georgia 30334

Subject: Emergency Action Plan for Petit Lake Dam, Revision 4
Pickens County
Permit #112-009-0462

Dear Ms. Betsill:

Big Canoe Property Owner's Association (POA) and its consultant Geosyntec Consultants, Inc. (Geosyntec) received the Safe Dams Program (SDP) comments on the Draft Emergency Action Plan (EAP) for Petit Lake Dam in your letter dated 14 October 2022. For continuity and clarity, we have listed each of your comments below, along with our responses immediately following. The revised Draft EAP and inundation mapping informing the EAP have been updated based on these comments and are being submitted concurrently.

1. The "Draft" watermark must be removed from the document.

Geosyntec – Following SDP concurrence of the changes proposed herein, Geosyntec will remove the "Draft" watermark from the revised document and issue a final version of the EAP.

2. Section 1.3 refers to the former Safe Dams Program storage for the dam, which has been updated. It also gives a storage for the dam of 5000 acre-feet instead of 5635 acre-feet.

Geosyntec – The maximum water storage for the reservoir, as accepted by the SDP on 10 August 2022, has been updated in the text to reflect 3,635 acre-feet.

3. The EAP references the Lake Petit Dam Operations & Maintenance (O&M) Plan (Geosyntec, 2022). Please provide this office with a copy of this document.

Geosyntec – A copy of the Lake Petit Dam Operations & Maintenance (O&M) Plan will be provided to SDP upon submission of the revised and approved EAP.

4. Appendix C is not consistent with itself, the rest of the EAP, or the August 4, 2022, volume memo as to the normal pool area and elevation, and top of dam elevation and volume. Additional parameters for the dam are not consistent. The number of

downstream roadways is also not consistent in Appendix C, with various places listing 10, 11, or 12 roadway crossings.

Geosyntec – The normal pool area and elevation, top of dam elevation, and volume values have been updated to be consistent between the EAP and Appendix C. There are 12 modeled bridges downstream of Lake Petit and the mentions of these have been updated.

5. The Lake Petit Dam height used for the breach and breach parameter computation is substantially less than the height listed in the Safe Dams database and elsewhere in the EAP. Use of a lower height must be justified.

Geosyntec – The height used for the modelled breach time and width is the maximum height of water in the reservoir (at the upstream toe), as there is no storage volume available for the breach below the upstream toe. This is less than the regulatory height of the dam, which considers the height from crest to the downstream toe, but utilizes the same maximum storage volume.

6. Appendix C states that 1 acre-foot of storage was used at each roadway crossing. Was this volume used to compute breach time and breach width? If so, is this reasonable?

Geosyntec – The 1 acre-foot of storage was used to compute the breach time as this leads to conservative results (i.e., shorter breach time). The breach width was assumed to be the width of the channel.

7. The conclusions state that, "This report summarizes the results of the dam breach analysis for the purpose of supporting a Hazard Potential Classification Assessment (HPCA) for the Lake Petit Dam... Based on the assumptions and inputs as described herein, it is Geosyntec's opinion that the Lake Petit Dam is Category I, Very Large Dam per the Georgia SDP Engineering Guidelines." The dam is currently Category I, and no re-classification is being considered. These statements should be removed.

Geosyntec – This change has been implemented.

8. Is the upstream road crossing at Old White Road actually a crossing of Justice Way? Is the correct stream opening modeled?

Geosyntec – Yes, the crossing at Old Mill White Road (Upstream) is the crossing at Justice Way. At the time of surveying, Justice Way was not included on public maps and was a private road crossing. A note has been added to clarify these are the same crossing.

9. The Froehlich worksheet gives an embankment height at Cove Road of 96.5 feet. Section 5.2 indicates Cove Road breaches. The height on the Froehlich computation does not seem reasonable and contradicts other parts of Appendix C. Table 6 indicates a 6.7 foot

depth of flooding over Cove Road, and Table 7 indicates 6.7 feet of overtopping at Cove Road. Why was the Froehlich computation given for Cove Road but not the other roadways?

Geosyntec – The Cove Road crossing is a large embankment crossing and was modeled as an embankment dam using the Froehlich equations. The other road crossings are generally much smaller and constructed of rigid materials (wood, concrete). The breach parameter sheet for Cove Road has been updated to reflect the correct height and the text has been updated to clarify. Updating the breach height changed the breach parameters slightly, but there was no discernable impact on the simulated peak water surface elevation and inundation extents.

In addition to the above comments, SDP offered a non-regulatory comment for consideration. For continuity and clarity, we have listed your comment below along with our response immediately following.

1. What is the intent of the full-page single signature concurrence page?

Geosyntec – The intent of the full-page single signature concurrence page is to provide an option for those signing in the case not all signatories are able to sign the same sheet.

We have revised the EAP based on your comments. Should there be no further comments, we will issue a final version of this EAP to the entities involved in the emergency response, including yourself.

On behalf of Big Canoe POA, Geosyntec thanks you for your review and comments in finalizing this EAP. Please contact the undersigned, at (423) 385-2312, if you have any questions.

Sincerely,



Wesley MacDonald, P.E
Senior Engineer
Geosyntec Consultants, Inc.

cc: Big Canoe Property Owner's Association
attachment: Revised Draft EAP