

07 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 07 January 2022. An initial response to your comments was sent on 04 February 2022, the subsequent update to the lake volume was sent to the SDP on 04 August 2022, and the SDP concurrence for the updated lake volumes was received on 10 August 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. Please either include low-lying areas around Petit Creek in the areas to be prepared for evacuation in the warning messages for Level 2 or just reference mapping in the EAP as is done in the Level 3 warning message. The warning message for use by emergency services mentions not to travel on Hwy. 53. Are there other roadways that the public should avoid?

***Geosyntec – The Level 2 warning message has been updated to reference the inundation mapping in the EAP to identify the areas to be prepared for evacuation as is done in the Level 3 warning message. Additional major roadways the public should avoid have been added.***

3. Section 5.1 states the initial boundary condition of the breach routing used in the EAP was the top of dam elevation of 1648 feet. Please verify that the routing begins with the reservoir at top of dam elevation, and that the top of dam elevation is 1648.

***Geosyntec – The maximum water storage elevation has been verified as elevation 1647 feet by a review of the most current survey data available to Geosyntec. Additionally, the initial boundary condition of the breach routing has been confirmed and updated to begin with the reservoir at the verified maximum water storage elevation of 1647 feet. This updated elevation and associated lake volume has been updated per correspondence with SDP dated 10 August 2022. This initial boundary condition is defined in Appendix C in Section 4.2 and in the Breach Parameter Calculation in Attachment D.***

4. Section 6, Step 4, Termination and Follow Up, states that when a level 3 emergency is terminated without actual failure of the dam, “the Georgia Safe Dams technical representative will inspect the dam and/or require a state certified engineer to inspect the dam....” While the Safe Dams Program may inspect the dam, the owner, not the Safe Dams Program, is responsible to make sure the dam is inspected. The Safe Dams Program should be involved in the decision to terminate the emergency.

***Geosyntec – The language in Section 6, Step 4 has been revised to state that the Dam Owner’s Technical Representative will inspect the dam and coordinate with the SDP prior to the termination of an Emergency Condition C (Level 3) event that has not caused actual dam failure.***

5. Section 7.3.1 appears to give the incorrect emergency/condition level for imminent or completed failure in the opening paragraph.

***Geosyntec – The text in Section 7.3.1 has been revised accordingly to reflect Condition C (Level 3) for imminent or completed failure.***

6. The volume of Lake Petit Dam used in the breach analysis is substantially different from the volume in the Safe Dams Database. The volume used should either be corrected or supporting data in favor of use of the lower volume should be presented.

***Geosyntec – The volume of Lake Petit Dam has been revised based on a bathymetric survey. The revised volume calculations were submitted to the SDP on 04 August 2022 and accepted by the SDP on 10 August 2022. The revised volume has been incorporated in the revised dam breach modeling and inundation mapping reported in the revised EAP.***

7. The EAP references the Lake Petit Dam Operations & Maintenance (O&M) Plan (Geosyntec, 2021). 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 EAP.***

8. The main body of the EAP mentions that Lake Disharoon will be inundated by the flood wave from a failure of Petit Lake Dam. Modeling and flooding of Lake Disharoon Dam should be discussed in the Dam Breach Analysis in Appendix C.

***Geosyntec – The modeling and inundation of Lake Disharoon has been addressed in the Dam Breach Analysis in Appendix C.***

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

1. Should the Safe Dams Program be listed with a (1) call priority on the notification flowchart for Level 2 and 3 emergencies?

***Geosyntec – Out of concern for public safety, the critical infrastructure with public facilities at Big Canoe has been listed with the (1) call priority. The EAP has been updated to list SDP with a (2) call priority on the notification flowchart for these emergencies (from a [4] priority).***

2. Please clarify the difference between inundated structures in Table 4 and Table 5.

***Geosyntec – Table 4 in the previous draft showed inundated parcels and addresses downstream of the dam, while Table 5 in the previous draft showed inundated structures and addresses downstream of the dam. The information in these tables was provided by Pickens County EMA. However, the list of parcels (Table 4) has been removed as part of the revised EAP and the Pickens County EMA provided an updated list of structures to identify structures within a 100 foot buffer outside of the inundation area as Table 4 in the revised EAP.***

3. In Table 6, you should consider adding to some of the action items to perform the action if it is safe to do so.

***Geosyntec – The EAP will be updated to clarify that certain action items shown in Table 6 (Table 5 in the revised EAP) shall be performed only if it is safe to do so.***

4. Is it reasonable to group embankment movement, embankment seepage, spillway flows, and sinkholes all together for the purpose of defining remedial actions? Some of these issues will have different failure modes and may warrant other remedial actions. Under

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Security Threat or Sabotage, you should consider mentioning to notify appropriate authorities and secure access to the dam.

***Geosyntec – The grouping of these events has been updated. Additionally, the suggested remedial actions for the Security Threat or Sabotage event have been included.***

We have revised the EAP based on your comments. This process included the performance of a bathymetric survey to confirm the volume of Lake Petit Dam used in the breach analysis. The volume determined was confirmed with SDP prior to additional dam breach modeling. 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