

Vermont Department of Environmental Conservation

Facilities Engineering Division

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Montpelier, VT 05620

Agency of Natural Resources

August 1, 2013

Mr. Mike Zienkiewicz
Director of Facilities,
Girl Scouts of the Green and White Mountains
One Commerce Drive, P.O. Box 10832
Bedford, NH, 03110-0832

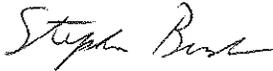
Dear Mr. Zienkiewicz:

Enclosed is a copy of the report on our inspection of the Gillette Pond Dam on July 12, 2013.

The inspection was conducted under provisions of 10 VSA, Section 1105. The report outlines the condition of the dam, recommendations for surveillance and maintenance, and information about the jurisdiction of the Department under the statute on dams (10 VSA Chapter 43).

If you have any questions or need assistance, please contact me.

Sincerely,



Stephen Bushman, P.E.
Dam Safety Engineer

MEMORANDUM

TO: To The File
FROM: Stephen Bushman, P.E., Dam Safety Engineer
DATE: July 18, 2013
SUBJECT: Inspection of Gillette Pond Dam, Richmond, VT.

On July 12, 2013, Stephen Bushman, P.E., Steve Hanna and Seth Haven, made an inventory inspection of the Gillette Pond Dam located in Richmond, Vermont, State Identification Number 166.01. The dam is owned by the Girl Scout Council of Vermont. Permission to inspect the dam was provided by Mike Zienkiewicz, Director of Facilities, Girl Scouts of the Green and White Mountains. This inspection was carried out under provisions of Title 10 of the Vermont Statutes Annotated, Section 1105. A number of photos were taken.

OVERALL CONDITION

The overall condition of the dam was POOR. The dam was partially breached at the outlet and three other locations. Severe leakage was noted at one of the locations. The dam appeared to have been damaged by heavy rains and flash flooding the first week of July, 2013.

DOWNSTREAM HAZARD CLASSIFICATION

The dam is a Class 3, "Low Hazard" Dam.

JURISDICTION

Since the dam impounds more than 500,000 cubic feet, any alteration, reconstruction, breaching, or removal would require prior approval from the Department under provisions of 10 VSA Chapter 43.

RECOMMENDATIONS FOR OWNER

1. **For immediate attention:** The dam is in such a deteriorated condition that it needs to be completely replaced or removed. The services of a professional engineer qualified in dam safety should be retained and their recommendations followed once the proper permits are obtained.
2. The debris and logs in the water and blocking the control outlet should be removed and the outlet kept clear. This will give limited protection by maximizing the available spillway capacity.

INSPECTION

The inspection of the dam was conducted on July 12, 2013 at 1415 hours. The weather was sunny with temperatures in the 80's. This report is visualized as if the reader was looking downstream. The following was observed:

1. The dam is constructed of dry lay stone approximately 3 feet thick, 8 feet high at the maximum, and 150 feet long. The dam appears to be founded on bedrock and a sloping outcropping was clearly visible at the left end of the dam. Numerous large trees and brush were growing on the dam. It appears that a control outlet may have been constructed on top of the ledge at the left end based upon finding pieces of concrete that match the ledge contour.
 - a) Upstream section: There was about two and one-half feet of the upstream wall of the dam visible due to the high water level of Gillette Pond combined with the high turbidity of the pond due to the recent flash flooding. The visible portion was irregular and in numerous locations stones had been dislodged making those sections less than 3 feet wide. A moderate amount of debris, including large logs, was accumulated along the face.
 - b) Crest: The crest of the dam was irregular and had what appeared to be three partial breaches. These areas had loss of stones and were lower than the crest of the dam by about 2 feet or greater. One breach, about 4 feet in length was located near the right abutment. The second breach, near the mid section of the dam, was about 20 feet in length and appeared to be about two feet lower and about one foot thinner than the rest of the dam. There was no water going over this breach at the time of the inspection, however a significant amount of water was flowing through a thin section immediately below this breach. There also appeared to be a breach about 6 feet wide near the left end of the dam. This breach appeared to be about 2.5 to 3 feet deep and was controlling the outflow of the pond.
 - c) Downstream Section: The downstream section was irregular and had been damaged in the area of the breaches. Most notably was the 20 foot breach near the center of the dam where a loss of stone from the downstream face was evident. This was the area where a significant amount of leakage through the thinner section of the dam was occurring. Although it was more difficult to observe due to the flowing water; it did appear that some stones were lost from the downstream face in the vicinity of the control outlet near the left end of the dam.
 - d) Trees: There were numerous (up to a dozen) large trees growing on the crest of the dam and/or on the downstream face. It is not known if there were trees growing in the areas that had been breached, since any debris located in the channel had been cleared during road repairs. Although in some cases these trees appeared to be holding the stone together, overall the roots are having a destabilizing effect on the stone, creating voids and loosening the stone. Most of the trees are not growing on what would be considered a firm base, and if the trees blow or fall over an additional loss of rock in those areas will occur.
2. Spillway
 - e) Approach Channel: The approach to the control outlet was blocked with large logs and other debris.
 - f) Discharge Channel: The discharge channel consisted of debris, trees and stone directing flow into a large culvert under a public road.

HYDROLOGY AND HYDRAULICS

The drainage area at this site is about 1,472 acres. The pond area at the normal pool is about 26 acres with storage of about 130 acre-feet. At the dam crest, the pool stores about 150 acre-feet.