State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES
6 Hazen Drive, P.O. Box 95, Concord, NH 03302-0095
(603) 271-3406 FAX (603) 271-7894

April 25, 2002
**Letter of Deficiency**
DAM #035.12
DAM #035.13

Mr. Corey Smith
Waterville Estates Association
1 Village Center, Box 36WE
Campton, NH 03223

RE: Lock I Dam #035.12 and Locke II Dam #035.13, Campton

Dear Mr. Smith:

The Department of Environmental Services, Dam Bureau (DES) consistently strives to enhance the safety of dams in New Hampshire through its dam safety program. One of the many instruments that plays a part in reaching this goal is our inspection program. DES is forwarding this correspondence to you to advise you that in accordance with RSA 482:12 and Env-Wr 502.02, an inspection of the subject dam was conducted on April 8, 2002. During this visual inspection and/or file review, the following deficiencies were observed:

**DAM #035.12**

There was no operation and maintenance plan on file with the DES;

2. There was a sinkhole 20 feet from the outlet headwall on the downstream embankment along the alignment of the primary outlet pipe. Review inside the pipe indicated that approximately 20 feet within the pipe, at what appeared to be a joint, settlement and separation of the pipe by several inches had occurred. Beaver debris was observed inside the pipe at this junction with soil observed in the gap between the pipes;

3. Beaver debris was observed within the stoplog section increasing the water level within the impoundment by several inches. It was noted by Mr. Jimmy Demerritt representative of Waterville Estates Association that the association is constantly removing the beaver debris as was evident with recent removal activity observed at the primary inlet section;

4. The pavement through the emergency spillway section was cracked with some potholes and missing asphalt;

5. There was brush and trees growing within the riprap swale along the right groin of the dam near the emergency spillway outlet; and

6. There was limited to no erosion protection around the outlet structure on the upstream embankment of the dam. It was reported that this is mostly due to beaver activity.

DES believes that the above deficiencies can be corrected by performing the following items by the indicated schedule:

**July 1, 2002:**

1. Lower the pool level by operating the 12" diameter pond drain. This drain should remain fully open until the principal spillway pipe has been replaced;

2. Submit an application for reconstruction of the sinkhole 20 feet from the outlet headwall and the failed pipe section. Contact our office for further information to develop a plan for the reconstruction project;

3. Prepare and submit to the DES a written operational procedure plan. The plan should describe the control of impoundment levels, monitoring and maintenance procedures, and identify emergency contact personnel. It should be noted that the operation and maintenance plan is required with the reconstruction application;

4. Coordinate with the Town of Campton for the repair of the potholes and deteriorated asphalt through the emergency spillway section;

5. Remove the trees and brush growth through the riprap swale along the right groin of the dam downstream of the emergency spillway; and

6. Develop an erosion resistant cover around the upstream inlet structure.

As a result of this inspection and file review DES has determined that the hazard classification of this dam has changed from a non-hazard "AA" dam to a minimum hazard "A" dam. The inspection schedule will not change due to the change in hazard classification, however you will be responsible for payment of an annual dam registration fee of $100.

**DAM #035.13**

1. The crest of the dam was not level along its entire length. There was a section approximately 20 feet long in the area of the drop inlet that was +/- 1 foot lower than the remainder of the crest;

2. Approximately 3 to 4 feet of fill had been mounded up in the lower portion of the emergency spillway, effectively reducing the overall capacity of the dam and creating two narrow channels on either side of the mound. However, the hydraulic analysis indicated that the dam could pass the design storm with 1.1 foot of freeboard;

3. There are small trees and brush on the downstream face of the dam in the following locations:

    a. Around the entire structure obscuring the view of the outlet structure from the crest of the dam;
    b. Within 10 feet of both the left and right groin of the dam;
    c. Near the entire toe of the dam around the area of historic seepage;
    d. Along the entire downstream face;

4. There were two ruts/erosion channels in the center of the downstream embankment;

5. The concrete around the circumference of the drop inlet was deteriorated and allowing water to enter the embankment in this area; and

6. There was historic seepage at the downstream toe of the dam and along the right groin of the dam. This is historic seepage and does not appear to have increased since the previous inspection.

DES believes that the above deficiencies can be corrected by performing the following items by the indicated schedule:

**November 1, 2002:**

1. Add material, to be approved by the dam bureau, to the crest of the dam near the outlet structure;

2. Re-grade the emergency spillway to have a homogeneous surface throughout. It should be noted that the invert should be no higher than the current configuration with a gradual slope downstream;

3. Repair the voids around the circumference of the drop inlet to prevent the infiltration of water into the embankment;

4. Remove the small tree and brush growth from the following locations along the downstream embankment:
    a. Within 20 feet of the outlet at the downstream toe of the dam;
    b. Within 15 feet of both the left and right groin of the dam;
    c. Within 15 feet of the entire toe of the dam;
    d. From the entire downstream face of the dam;

5. Repair the ruts/erosion channels in the center of the downstream embankment. Any disturbance to the embankment soils should be treated with topsoil and grass seed; and

6. Monitor and record observations of the historic seepage present at the downstream toe of the dam. Any increase or change should be immediately reported to the DES Dam Bureau.

DES is requesting that you complete and submit the attached "Intent to Complete Repairs" form, within 30 days of receipt of this letter, that will provide for correction of the identified deficiencies by the date(s) indicated above. If you believe changes to the items of work or dates are necessary, please make the changes directly on the form and provide a brief explanation. We have enclosed a self addressed stamped envelope for you to return this form.

Our intent in sending you this correspondence is to make you aware of items that DES believes warrant your attention to insure the continued safe operation of your dam. It is our hope that, through the submittal of the attached form and a commitment to keeping a well-maintained dam, you will voluntarily comply with the requested items of work. If we do not receive the intent form or a similarly adequate written reply, we will assume that you are in agreement with our findings and recommendations and DES will carry out follow-up inspections accordingly.

If you have any questions or comments regarding this Letter of Deficiency or would like to be present at future inspections, please contact me at 271-3406, or write to the Water Division at the address listed on the top of the previous page.

Sincerely,

COPY

Dale F. Guinn, P.E.
Dam Safety Engineer

Attachments Guideline for an O&M plan, DB8, DB13
cc: Gretchen Rule
Town of Campton
Martha Israel, GZA
Certified #7099 3400 0002 9773 6828
DFG/was/h:/safety/wendy/lod/035-12&13lod.doc