



W. Marshall Taylor Jr., Acting Director

Promoting and protecting the health of the public and the environment

April 13, 2015

Mrs. Kim Fortner, P.E.
Gaffney Board of Public Works
Post Office Box 64
Gaffney, South Carolina 29340

Re: Reinspection of Dam D-0008, Lake Welchel Dam, Cherokee County

Dear Kim:

On April 6, 2015, I conducted a routine reinspection of the Lake Welchel Dam.

I am enclosing a copy of my inspection report on the dam. Overall, the dam appears in good condition. You should continue your current maintenance program.

A copy of the Emergency Notification Plan is in our file. Should the dam experience difficulty, the appropriate emergency officials should be notified. The agencies listed on the plan can provide assistance in determining what actions to take for protection of the public health and downstream property.

You will be notified when the next reinspection of this dam is scheduled.

Sincerely,

Mark Cann, Sr., P.E.
Spartanburg EQC

cc: John Poole - Facilities Compliance Section, BW, w\inspection report

Section III (Dam Inspection Checklist) continued

B. Upstream Slope

- i. Vegetation (grass, trees weeds)? P.P-MAP
- ii. Animal activity observed? NO
- iii. Any obvious alterations or repairs made? NO
- iv. Erosion observed on upstream slope? NO
- v. Settlement or cracks visible in slope? NO

C. Down Stream Slope

- i. Vegetation (grass, trees weeds)? GRASS
- ii. Animal activity observed? NO
- iii. Any obvious alterations or repairs made? NO
- iv. Erosion observed on down stream slope? NO
- v. Settlement or cracks visible in slope? NO
- vi. Toe drains flowing? very slight
- vii. Any seepage observed? If so, describe location, flow rate, and any turbidity or color within the flow: NO

D. Primary Spillway

- i. Any visible deterioration of structure? NO
- ii. Is there an obvious need to repair or replace trash rack? NO
- iii. Any noticeable problems with debris? NO
- iv. Is valve or gate present? YES

E. Outlet Pipe

- i. Any water visibly flowing or leaking outside of the discharge pipe? NO
- ii. Describe any deflection or damage observed to the pipe: OK
- iii. Visible condition of outlet channel: OK

F. Auxiliary (Emergency) Spillway

- i. Noticeable obstructions to flow? NO
- ii. Animal activity observed? NO
- iii. Any noticeable deterioration in the approach or discharge channel? NO
- iv. Any visible deterioration of structure's crest? NO

F. Auxiliary (Emergency) Spillway continued

v. If applicable, any observed exposure of rebar reinforcement? NA

vi. If applicable, any visible leakage below concrete spillway? NO

H. Downstream/Hazard Class Issues

i. Any noticeable changes immediately downstream of the dam that affects the hazard classification? _____

NO

I. Emergency Action Plan (EAP)

i. Emergency Action Plan provided by owner? _____

ii. Does EAP contains emergency alert notification plan? If so, when was it last updated? _____

iii. Does EAP contain specific actions to take if the dam has failed or is near failure? _____

Section IV (Conclusions)

General comments and recommendations:

Dam is in good condition and well-maintained.

Preliminary Dam Inspection Disclaimer:

The information contained in the preliminary inspection report is intended as an aid to identify those dams that require maintenance and/or repair actions to reduce their danger to human life or property only. It is not intended as professional engineering or consulting advice for conditions or situations present at individual dams. It is not a substitute for a detailed inspection, nor does it replace the need for services provided by registered professional engineers. If your dam is experiencing an unusual situation consult with engineering professionals to find an appropriate remedy. Preliminary inspections conducted by South Carolina Department of Health and Environmental Control (the Department) are provided "AS IS" and "as available", without warranties of any kind, either express or implied. Preliminary inspections consist only of a visual but technical examination of the dam and its appurtenant works. All findings are based solely on visual observations of the inspector at the time of the inspection. Common law holds that the storage of water is a hazardous activity and the Department does not assume any responsibility or risk for your actions or inactions. Dam owners are responsible for the safe operations and maintenance of their impoundment structures.



Catherine E. Heigel, Director

Promoting and protecting the health of the public and the environment

October 5, 2015

Alvin A. Taylor, Director
South Carolina Department of Natural Resources
PO Box 167
Columbia SC 29202

Re: Reinspection of Dam D-2162,
John D. Long Lake Dam, Union County

Dear Mr. Taylor:

On September 1, 2015 a routine reinspection of the John D Long Lake Dam was performed. I am enclosing a copy of the inspection report. The following deficiencies were noted:

- The enclosed Emergency Action Plan form should be completed and submitted to this office for our file.
- Brush should be cleared from the water line on the upstream face of the dam.
- Kudzu in the emergency spillway should be cleared.

This dam is given an overall Satisfactory assessment. Please complete the requested items and submit to this office within 90 days of date of this letter. Please feel free to call (864-596-3800) if I can be of any assistance.

Sincerely,

Mark Cann, Sr., P.E.
Spartanburg EQC Office

Cc: David Graves – Dams and Reservoir Safety, BW

Section III (Dam Inspection Checklist) continued

B. Upstream Slope

- i. Vegetation (grass, trees weeds)? Grass, brush and rip-rap at water line. Brush and mimosa tree at water line need to be cleared.
- ii. Animal activity observed? No
- iii. Any obvious alterations or repairs made? No
- iv. Erosion observed on upstream slope? No
- v. Settlement or cracks visible in slope? No

C. Down Stream Slope

- i. Vegetation (grass, trees weeds)? Grass
- ii. Animal activity observed? No
- iii. Any obvious alterations or repairs made? No
- iv. Erosion observed on down stream slope? No
- v. Settlement or cracks visible in slope? No
- vi. Toe drains flowing? No toe drains.
- vii. Any seepage observed? If so, describe location, flow rate, and any turbidity or color within the flow: No

D. Primary Spillway

- i. Any visible deterioration of structure? No
- ii. Is there an obvious need to repair or replace trash rack? No
- iii. Any noticeable problems with debris? No
- iv. Is valve or gate present? Yes

E. Outlet Pipe

- i. Any water visibly flowing or leaking outside of the discharge pipe? No
- ii. Describe any deflection or damage observed to the pipe: None
- iii. Visible condition of outlet channel: OK

F. Auxiliary (Emergency) Spillway

- i. Noticeable obstructions to flow? Need to clear kudzu from spillway.
- ii. Animal activity observed? No
- iii. Any noticeable deterioration in the approach or discharge channel? No
- iv. Any visible deterioration of structure's crest? No

F. Auxiliary (Emergency) Spillway continued

v. If applicable, any observed exposure of rebar reinforcement? _____

vi. If applicable, any visible leakage below concrete spillway? _____

H. Downstream/Hazard Class Issues

i. Any noticeable changes immediately downstream of the dam that affects the hazard classification? No

I. Emergency Action Plan (EAP)

i. Emergency Action Plan provided by owner? Needs to be updated.

ii. Does EAP contains emergency alert notification plan? If so, when was it last updated? _____

iii. Does EAP contain specific actions to take if the dam has failed or is near failure? _____

Section IV (Conclusions)

General comments and recommendations:

Dam is in good condition but the emergency spillway needs to be cleared of kudzu.

Emergency Operation Plan needs to be updated. Copy of Form 2606 will by supplied with inspection report.

Preliminary Dam Inspection Disclaimer:

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Preliminary Inspection Report for South Carolina Regulated Dams and Impoundment Structures Regulations R.72-1 through R.72-9

Section I (Owner's Information)

A. Dam Number: D ____ & Hazard Class ____ B. Name of Dam: _____
C. Inspection Date (_ / _ / 20 __) & Time: _____ D. Date of Last Inspection: (_ / _ / ____)
E. Location-County/City: _____ / _____ F. EQC Regional Office: _____
G. Inspector's Name: _____
H. Owner's Name: _____
I. Contact Person (if different from above): _____
J. Dam Owner's or Contact Person's Phone Numbers: Home (___) ____ - ____
Office (___) ____ - ____
Other (___) ____ - ____
K. Dam Owner's or Contact Person's mailing address:
Address 1 _____
Address 2 (optional) _____
City _____, State ____ Zip Code _____ - _____

Section II (Dam Condition)

General Condition Assessment (Select one of the following):

- a) Satisfactory b) Fair c) Poor d) Unsatisfactory e) Not Rated

Section III (Dam Inspection Checklist)

A. Dam Crest

- i. Vegetation (grass, trees weeds)? _____
ii. Animal activity observed? _____
iii. Any obvious alteration or repairs made? _____
iv. Erosion noticed on crest? _____
v. Any visible settlement, misalignment or cracks? _____

Section III (Dam Inspection Checklist) continued

B. Upstream Slope

- i. Vegetation (grass, trees weeds)? _____
- ii. Animal activity observed? _____
- iii. Any obvious alterations or repairs made? _____
- iv. Erosion observed on upstream slope? _____
- v. Settlement or cracks visible in slope? _____

C. Down Stream Slope

- i. Vegetation (grass, trees weeds)? _____
- ii. Animal activity observed? _____
- iii. Any obvious alterations or repairs made? _____
- iv. Erosion observed on down stream slope? _____
- v. Settlement or cracks visible in slope? _____
- vi. Toe drains flowing? _____
- vii. Any seepage observed? If so, describe location, flow rate, and any turbidity or color within the flow: _____

D. Primary Spillway

- i. Any visible deterioration of structure? _____
- ii. Is there an obvious need to repair or replace trash rack? _____
- iii. Any noticeable problems with debris? _____
- iv. Is valve or gate present? _____

E. Outlet Pipe

- i. Any water visibly flowing or leaking outside of the discharge pipe? _____
- ii. Describe any deflection or damage observed to the pipe: _____
- iii. Visible condition of outlet channel: _____

F. Auxiliary (Emergency) Spillway

- i. Noticeable obstructions to flow? _____
- ii. Animal activity observed? _____
- iii. Any noticeable deterioration in the approach or discharge channel? _____
- iv. Any visible deterioration of structure's crest? _____

F. Auxiliary (Emergency) Spillway continued

v. If applicable, any observed exposure of rebar reinforcement? _____

vi. If applicable, any visible leakage below concrete spillway? _____

H. Downstream/Hazard Class Issues

i. Any noticeable changes immediately downstream of the dam that affects the hazard classification? _____

I. Emergency Action Plan (EAP)

i. Emergency Action Plan provided by owner? _____

ii. Does EAP contains emergency alert notification plan? If so, when was it last updated? _____

iii. Does EAP contain specific actions to take if the dam has failed or is near failure? _____

Section IV (Conclusions)

General comments and recommendations:

Preliminary Dam Inspection Disclaimer:

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Preliminary Inspection Report for South Carolina Regulated Dams and
Impoundment Structures Regulations – DHEC 2604
R.72-1 through R.72-9

INSTRUCTIONS

Purpose: To satisfy the inspection requirements for high and significant hazard dams regulated by South Carolina Department of Health and Environmental Control. See R.72-1 through R. 72-9.

Who will complete the form: Regional engineers and inspectors engaged in the dams and reservoir safety program performing dam inspections.

Section I (Owner's Information):

- A) Dam Number; Enter the Dam's inventory number.
- B) Name of Dam; Enter the common name of dam found within EFIS.
- C) Inspection Month & Time; Enter the day, month, year, and time in which the inspections was performed.
- D) Date of Last Inspection; Enter the day, month, and year, in which the last inspection was performed.
- E) Location-County/City; Enter the county and city, if applicable, where the dam is located.
- F) EQC Regional Office; Enter the DHEC EQC Regional office that covers the area in which the dam is located.
- G) Inspector's Name: Enter the name of the person performing the inspection.
- H) Owner's Name: Enter the name of the person owning the dam. If there is multiple owners list them and their contact information in the "General comments and recommendations are in section IV.
- I) Contact Person; Enter the name of the person that represents the dam owner during the inspection. This person should be authorized to remedy any deficiencies found by the inspector.
- J) Dam Owner's or Contact Person's Phone Numbers; Enter the home, office, and other available numbers for the Dam owner or Contact person.
- K) Dam Owner's or Contact Person's mailing address; Enter the dam owner's or contact person's mailing address including city state and zip code.

Section II (Dam Condition):

Once the inspection is completed indicate the general condition of the dam. The assessment can be one of the following four categories:

- a) SATISFACTORY- No existing or potential dam safety deficiencies are recognized. Acceptable performance is expected under all loading conditions in accordance with state engineer's rules and regulations for dams or tolerable risk guidelines.

- b) FAIR- No existing dam safety deficiencies are recognized for normal loading conditions. Rare or extreme hydrologic and/or seismic events may result in a dam safety deficiency. Risk may be in the range to take further action.
- c) POOR- A dam safety deficiency is recognized for loading conditions, which may realistically occur. Remedial action is necessary. A POOR condition is used when uncertainties exist as to critical analysis parameters, which identify a potential dam safety deficiency. Further investigations and studies are necessary.
- d) UNSATISFACTORY- A dam safety deficiency is recognized that requires immediate or emergency remedial action for problem resolution.
- e) NOT RATED- This should only be used if it is not possible to assess to dam's condition due to site constraints on visibility on the day of inspection. If vegetation is a problem the owner should be ordered perform maintenance to remove it before the next visit.

Section III (Dam Inspection Checklist):

This section is self-explanatory and guides the inspector through the inspection process. Follow the dam inspection checklist to complete the inspection. Mark any deficiencies observed during the inspection. If there were the deficiencies reported during the last inspection cycle check to see if they were corrected. If items are not applicable to the inspection of the dam, mark not applicable. If the dams has issues that are not covered in this section of the form make note of them in section IV.

Section IV(Conclusions):

Use the space to list additional responsible parties (dam owners) and issues found during the inspection that are not addressed in section III, as well as any general comments and recommendations generated during the inspection.

Office Mechanisms and filing: The form must be sent to the Dam's owner(s) and filed with the Bureau of Water, Dams and Reservoir Safety Program, before the end of the following month after which the inspections were performed. The report will be filed in the Bureau of Water's file room and will be retained for at least three years after the Department certifies the removal of the inspected dam.



Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

April 2, 2013

Mr. Mitchell Turner
SJWD Water District
P.O. Box 607
Lyman, SC 29365

RE: Inspection of: **Dam D-3340, Lyman Lake Dam**
Dam D-3338, Apalache Mill Pond Dam
Dam D-3398, Lake Cooley Dam
Dam D-4493, SJWD RCC Dam

Dear Mr. Turner,

On March 08, 2013, I conducted a routine inspection of the dams referenced above. Your cooperation during the inspection was greatly appreciated. I am enclosing a copy of my inspection reports of each dam. Overall, the dams appear in good condition and the emergency notification plans have been properly updated. All the dams received a **Satisfactory** rating with the exception of the Apalache Mill Pond Dam that received a **Fair** rating. SJWD personnel demonstrated that the Apalache Mill Pond Dam is structurally sound, but the water level cannot be lowered in the lake in the event of an emergency.

SJWD is in the process of updating the EAP so that each dam will have it's own comprehensive plan. The schedule for each plan is based on priority. The EAP for the Apalache Mill Pond Dam is complete and is updated annually. The plan is very detailed and includes many different scenarios and related protocols for each type of incident that could occur. This will serve as a model for the remaining dams. All plans are expected for completion by 2014/2015.

If you have any questions, please call me at 864-596-3800.

Sincerely

Florence Hall
Regional Engineer Associate
Region 2 BEHS Spartanburg Office

Cc: John Poole, Bureau of Water – Dam Safety Program

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

Region 2

Serving Cherokee, Greenville, Pickens, Spartanburg and Union Counties

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Preliminary Inspection Report for South Carolina
Regulated Dams and Impoundment Structures
Regulations
R.72-1 through R.72-9

Section I (Owner's Information)

A. Dam Number: D 3338 & Hazard Class C1 B. Name of Dam: Apalache Mill Pond
C. Inspection Date (03/08/2013) & Time: 1050 D. Date of Last Inspection: (03/31/2011)
E. Location-County/City: Spartanburg / Greer F. EQC Regional Office: Region 2 BEHS Spartanburg
G. Inspector's Name: Florence B. Hall
H. Owner's Name: SJWD
I. Contact Person (if different from above): Mitch Turner
J. Dam Owner's or Contact Person's Phone Numbers: Home () -
Office (864) 949 - 2830
Other (864) 303 - 7690
K. Dam Owner's or Contact Person's mailing address:
Address 1 PO Box 607
Address 2 (optional) _____
City Lyman, State SC Zip Code 29365 -

Section II (Dam Condition)

General Condition Assessment (Select one of the following):

- a) Satisfactory b) Fair c) Poor d) Unsatisfactory e) Not Rated

Section III (Dam Inspection Checklist)

A. Dam Crest

- i. Vegetation (grass, trees weeds)? None
ii. Animal activity observed? None
iii. Any obvious alteration or repairs made? No
iv. Erosion noticed on crest? No
v. Any visible settlement, misalignment or cracks? No

Section III (Dam Inspection Checklist) continued

B. Upstream Slope

- i. Vegetation (grass, trees weeds)? None
- ii. Animal activity observed? None
- iii. Any obvious alterations or repairs made? No
- iv. Erosion observed on upstream slope? No
- v. Settlement or cracks visible in slope? No

C. Down Stream Slope

- i. Vegetation (grass, trees weeds)? None
- ii. Animal activity observed? None
- iii. Any obvious alterations or repairs made? No
- iv. Erosion observed on down stream slope? No
- v. Settlement or cracks visible in slope? No
- vi. Toe drains flowing? _____
- vii. Any seepage observed? If so, describe location, flow rate, and any turbidity or color within the flow: Yes, along the left side wall. This seepage is unchanged from previous inspections. No turbidity observed.

D. Primary Spillway

- i. Any visible deterioration of structure? No
- ii. Is there an obvious need to repair or replace trash rack? _____
- iii. Any noticeable problems with debris? No
- iv. Is valve or gate present? Not operable

E. Outlet Pipe

- i. Any water visibly flowing or leaking outside of the discharge pipe? _____
- ii. Describe any deflection or damage observed to the pipe: _____
- iii. Visible condition of outlet channel: _____

F. Auxiliary (Emergency) Spillway

- i. Noticeable obstructions to flow? _____
- ii. Animal activity observed? _____
- iii. Any noticeable deterioration in the approach or discharge channel? _____
- iv. Any visible deterioration of structure's crest? _____

F. Auxiliary (Emergency) Spillway continued

v. If applicable, any observed exposure of rebar reinforcement? _____

vi. If applicable, any visible leakage below concrete spillway? _____

H. Downstream/Hazard Class Issues

i. Any noticeable changes immediately downstream of the dam that affects the hazard classification? _____

Dam is Highest Dam Classification.

I. Emergency Action Plan (EAP)

i. Emergency Action Plan provided by owner? Yes

ii. Does EAP contains emergency alert notification plan? If so, when was it last updated? Yes. Latest update was February 20, 2012.

iii. Does EAP contain specific actions to take if the dam has failed or is near failure? Yes. Actions are very detailed and structured for various types of incidents as it relates to the dam.

Section IV (Conclusions)

General comments and recommendations:

SJWD have been performing quarterly monitoring for movement. A survey is also taken after heavy rain events. To date, no changes have been observed. This monitoring creates a history of the dam structure for future reference. These quantitative measurements indicate that the dam is structurally sound, but the dam was rated as "Fair" because the lake level can not be lowered in the event of an upstream emergency. The EAP is very detailed and includes many different scenarios and related protocols for each type of incident that could occur. SJWD has taken extra measures to safeguard the downstream area as much as possible. Overall, the dam is in good condition and is being properly monitored by the water system.

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**Preliminary Inspection Report for South Carolina
Regulated Dams and Impoundment Structures
Regulations
R.72-1 through R.72-9**

Section I (Owner's Information)

A. Dam Number: D 3340 & Hazard Class C1 B. Name of Dam: Lyman Lake Dam

C. Inspection Date (03/08/2013) & Time: 1115 D. Date of Last Inspection: (03/31/2011)

E. Location-County/City: Spartanburg / Lyman F. EQC Regional Office: 2 Spartanburg

G. Inspector's Name: Florence Hall

H. Owner's Name: SJWD

I. Contact Person (if different from above): Mitch Turner

J. Dam Owner's or Contact Person's Phone Numbers: Home (____) ____ - ____
Office (864) 949 - 2830
Other (864) 303 - 7690

K. Dam Owner's or Contact Person's mailing address:

Address 1 PO Box 607

Address 2 (optional) _____

City Lyman, State SC Zip Code 29365 - ____

Section II (Dam Condition)

General Condition Assessment (Select one of the following):

- a) Satisfactory b) Fair c) Poor d) Unsatisfactory e) Not Rated

Section III (Dam Inspection Checklist)

A. Dam Crest

- i. Vegetation (grass, trees weeds)? Maintained
- ii. Animal activity observed? None observable
- iii. Any obvious alteration or repairs made? No
- iv. Erosion noticed on crest? No
- v. Any visible settlement, misalignment or cracks? No

Section III (Dam Inspection Checklist) continued

B. Upstream Slope

- i. Vegetation (grass, trees weeds)? Maintained
- ii. Animal activity observed? None observable
- iii. Any obvious alterations or repairs made? No
- iv. Erosion observed on upstream slope? No
- v. Settlement or cracks visible in slope? No

C. Down Stream Slope

- i. Vegetation (grass, trees weeds)? Maintained
- ii. Animal activity observed? None observable
- iii. Any obvious alterations or repairs made? No
- iv. Erosion observed on down stream slope? No
- v. Settlement or cracks visible in slope? No
- vi. Toe drains flowing? _____
- vii. Any seepage observed? If so, describe location, flow rate, and any turbidity or color within the flow: No

D. Primary Spillway

- i. Any visible deterioration of structure? No
- ii. Is there an obvious need to repair or replace trash rack? _____
- iii. Any noticeable problems with debris? None
- iv. Is valve or gate present? Gate is submerged. Water is flowing freely through pipe.

E. Outlet Pipe

- i. Any water visibly flowing or leaking outside of the discharge pipe? No
- ii. Describe any deflection or damage observed to the pipe: None
- iii. Visible condition of outlet channel: Satisfactory

F. Auxiliary (Emergency) Spillway

- i. Noticeable obstructions to flow? No
- ii. Animal activity observed? None observable
- iii. Any noticeable deterioration in the approach or discharge channel? No
- iv. Any visible deterioration of structure's crest? No

F. Auxiliary (Emergency) Spillway continued

v. If applicable, any observed exposure of rebar reinforcement? No

vi. If applicable, any visible leakage below concrete spillway? A siphon was installed such that it flows into the spillway, but does not effect the capacity or free flow into the structure. This was installed for water quality purposes.

H. Downstream/Hazard Class Issues

i. Any noticeable changes immediately downstream of the dam that affects the hazard classification? _____

Dam is Highest Dam Classification

I. Emergency Action Plan (EAP)

i. Emergency Action Plan provided by owner? Yes

ii. Does EAP contains emergency alert notification plan? If so, when was it last updated? Yes, Contact list updated November 2011

iii. Does EAP contain specific actions to take if the dam has failed or is near failure? Yes

Section IV (Conclusions)

General comments and recommendations:

SJWD had scheduled this dam for a comprehensive EAP update that will include procedures based on the level of emergency.

It will be very similar to the EAP that was developed for the Apalache dam. Update may be completed by mid-2013.

Overall, the dam is in good condition and being properly maintained by SJWD.

Preliminary Dam Inspection Disclaimer:

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Preliminary Inspection Report for South Carolina
Regulated Dams and Impoundment Structures
Regulations
R.72-1 through R.72-9

Section I (Owner's Information)

A. Dam Number: **D 3398** & Hazard Class C1 B. Name of Dam: Lake Cooley Dam
C. Inspection Date (03 / 08 / 20 13) & Time: 1200 D. Date of Last Inspection: (03 / 31 / 2011)
E. Location-County/City: Spartanburg / Inman F. EQC Regional Office: Region 2 BEHS Spartanburg
G. Inspector's Name: Florence Hall
H. Owner's Name: SJWD
I. Contact Person (if different from above): Mitch Turner
J. Dam Owner's or Contact Person's Phone Numbers: Home () -
Office (864) 949 - 2830
Other (864) 303 - 7690
K. Dam Owner's or Contact Person's mailing address:
Address 1 PO Box 607
Address 2 (optional) _____
City Lyman State SC Zip Code 29365 -

Section II (Dam Condition)

General Condition Assessment (Select one of the following):

- a) Satisfactory b) Fair c) Poor d) Unsatisfactory e) Not Rated

Section III (Dam Inspection Checklist)

A. Dam Crest

- i. Vegetation (grass, trees weeds)? Maintained
ii. Animal activity observed? None observable
iii. Any obvious alteration or repairs made? No
iv. Erosion noticed on crest? No
v. Any visible settlement, misalignment or cracks? No

Section III (Dam Inspection Checklist) continued

B. Upstream Slope

- i. Vegetation (grass, trees weeds)? Slope was reseeded in winter and grass is scheduled for cutting this spring.
- ii. Animal activity observed? None observable
- iii. Any obvious alterations or repairs made? No
- iv. Erosion observed on upstream slope? None
- v. Settlement or cracks visible in slope? No

C. Down Stream Slope

- i. Vegetation (grass, trees weeds)? Slope was reseeded in winter and grass is scheduled for cutting this spring.
- ii. Animal activity observed? None observable
- iii. Any obvious alterations or repairs made? No
- iv. Erosion observed on down stream slope? No
- v. Settlement or cracks visible in slope? No
- vi. Toe drains flowing? Yes
- vii. Any seepage observed? If so, describe location, flow rate, and any turbidity or color within the flow: No

D. Primary Spillway

- i. Any visible deterioration of structure? No
- ii. Is there an obvious need to repair or replace trash rack? No
- iii. Any noticeable problems with debris? No
- iv. Is valve or gate present? Yes

E. Outlet Pipe

- i. Any water visibly flowing or leaking outside of the discharge pipe? No
- ii. Describe any deflection or damage observed to the pipe: None
- iii. Visible condition of outlet channel: Satisfactory

F. Auxiliary (Emergency) Spillway

- i. Noticeable obstructions to flow? No
- ii. Animal activity observed? None observable
- iii. Any noticeable deterioration in the approach or discharge channel? No
- iv. Any visible deterioration of structure's crest? No

F. Auxiliary (Emergency) Spillway continued

v. If applicable, any observed exposure of rebar reinforcement? _____

vi. If applicable, any visible leakage below concrete spillway? _____

H. Downstream/Hazard Class Issues

i. Any noticeable changes immediately downstream of the dam that affects the hazard classification? _____

Dam is Highest Dam Classification.

I. Emergency Action Plan (EAP)

i. Emergency Action Plan provided by owner? Yes

ii. Does EAP contains emergency alert notification plan? If so, when was it last updated? Yes, Contact list
updated November 2011

iii. Does EAP contain specific actions to take if the dam has failed or is near failure? Yes

Section IV (Conclusions)

General comments and recommendations:

SJWD has scheduled this dam for a comprehensive EAP update that will include procedures based on the level of emergency.

It will be very similar to the EAP that was developed for the Apalache dam. Update may be completed in the 2013/2014

fiscal year. Overall, the dam is in good condition and being properly monitored by SJWD.

Preliminary Dam Inspection Disclaimer:

The information contained in the preliminary inspection report is intended as an aid to identify those dams that require maintenance and/or repair actions to reduce their danger to human life or property only. It is not intended as professional engineering or consulting advice for conditions or situations present at individual dams. It is not a substitute for a detailed inspection, nor does it replace the need for services provided by registered professional engineers. If your dam is experiencing an unusual situation consult with engineering professionals to find an appropriate remedy. Preliminary inspections conducted by South Carolina Department of Health and Environmental Control (the Department) are provided "AS IS" and "as available", without warranties of any kind, either express or implied. Preliminary inspections consist only of a visual but technical examination of the dam and its appurtenant works. All findings are based solely on visual observations of the inspector at the time of the inspection. Common law holds that the storage of water is a hazardous activity and the Department does not assume any responsibility or risk for your actions or inactions. Dam owners are responsible for the safe operations and maintenance of their impoundment structures.

Section III (Dam Inspection Checklist) continued

B. Upstream Slope

- i. Vegetation (grass, trees weeds)? N/A
- ii. Animal activity observed? None
- iii. Any obvious alterations or repairs made? None
- iv. Erosion observed on upstream slope? None
- v. Settlement or cracks visible in slope? None

C. Down Stream Slope

- i. Vegetation (grass, trees weeds)? N/A
- ii. Animal activity observed? None
- iii. Any obvious alterations or repairs made? No
- iv. Erosion observed on down stream slope? No
- v. Settlement or cracks visible in slope? None
- vi. Toe drains flowing? N/A
- vii. Any seepage observed? If so, describe location, flow rate, and any turbidity or color within the flow: _____

D. Primary Spillway

- i. Any visible deterioration of structure? No
- ii. Is there an obvious need to repair or replace trash rack? N/A
- iii. Any noticeable problems with debris? No
- iv. Is valve or gate present? Yes

E. Outlet Pipe

- i. Any water visibly flowing or leaking outside of the discharge pipe? N/A
- ii. Describe any deflection or damage observed to the pipe: _____
- iii. Visible condition of outlet channel: _____

F. Auxiliary (Emergency) Spillway

- i. Noticeable obstructions to flow? None
- ii. Animal activity observed? _____
- iii. Any noticeable deterioration in the approach or discharge channel? _____
- iv. Any visible deterioration of structure's crest? _____

F. Auxiliary (Emergency) Spillway continued

v. If applicable, any observed exposure of rebar reinforcement? _____

vi. If applicable, any visible leakage below concrete spillway? _____

H. Downstream/Hazard Class Issues

i. Any noticeable changes immediately downstream of the dam that affects the hazard classification? _____

Dam is Highest Hazard Classification _____

I. Emergency Action Plan (EAP)

i. Emergency Action Plan provided by owner? Yes

ii. Does EAP contains emergency alert notification plan? If so, when was it last updated? Yes, Contact list
last updated November 2011.

iii. Does EAP contain specific actions to take if the dam has failed or is near failure? Yes

Section IV (Conclusions)

General comments and recommendations:

SJWD has scheduled this dam for a comprehensive EAP update that will include procedures based on the level of emergency.

It will be very similar to the EAP that was developed for the Apalache Dam. Update may be completed in the 2014/2015

fiscal year. Overall, the dam is in good condition and is being properly monitored by SJWD.

Preliminary Dam Inspection Disclaimer:

The information contained in the preliminary inspection report is intended as an aid to identify those dams that require maintenance and/or repair actions to reduce their danger to human life or property only. It is not intended as professional engineering or consulting advice for conditions or situations present at individual dams. It is not a substitute for a detailed inspection, nor does it replace the need for services provided by registered professional engineers. If your dam is experiencing an unusual situation consult with engineering professionals to find an appropriate remedy. Preliminary inspections conducted by South Carolina Department of Health and Environmental Control (the Department) are provided "AS IS" and "as available", without warranties of any kind, either express or implied. Preliminary inspections consist only of a visual but technical examination of the dam and its appurtenant works. All findings are based solely on visual observations of the inspector at the time of the inspection. Common law holds that the storage of water is a hazardous activity and the Department does not assume any responsibility or risk for your actions or inactions. Dam owners are responsible for the safe operations and maintenance of their impoundment structures.



Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

November 20, 2014

Ms. Alice Henderson
Hillbrook Forest Lake, Inc.
211 Brian Court
Spartanburg, SC 29307

RE: Inspection of **Dam D-3360, Hillbrook Forest Lake Dam**, Spartanburg County

Dear Ms. Henderson:

On November 12, 2014, I conducted a routine inspection of the Hillbrook Forest Lake Dam. Your assistance during the inspection was greatly appreciated. A copy of the report is enclosed. The dam was given a rating of "Fair" based on these findings:

- 1) The downstream and upstream slopes have several trees, but the slopes are accessible for visual inspections. A wet area on the right downstream slope needs to be routinely monitored for any changes and the tree bases should be monitored for any seepage that could occur.
- 2) The auxiliary spillway (emergency) is in good condition. Some erosion was observed at the very end of the structure, but this should not hinder or adversely divert flow toward the dam.

It is advised that the Home Owners Association budget for an engineer's assessment of the dam within the next three (3) years. A partial list of engineers is enclosed with this report.

During the inspection, a DHEC Emergency Action Plan template (DHEC Form 2606) was provided to you. **Please submit a completed copy to the Regional office within sixty (60) days from the receipt of this report.** The plan should include contact information for homes/churches/businesses located downstream that would be inundated by a failure of the dam.

It is being noted that the dam has an operable gate valve for lowering the water level of the dam. The HOA should have a procedure for who may open the valve and have secondary contacts, if you are not available to address concerns with the structure.

Should the dam experience difficulty, the appropriate emergency officials should be notified. The agencies listed in the emergency plan can provide assistance in determining what actions to take for protection of the public health and downstream property.



Preliminary Inspection Report for South Carolina Regulated Dams and Impoundment Structures Regulations R.72-1 through R.72-9

Section I (Owner's Information)

A. Dam Number: D 3360 & Hazard Class C1
B. Name of Dam: Hillbrook Forest Dam
C. Inspection Date (11/12/2014) & Time: 1020
D. Date of Last Inspection: (05/25/2012)
E. Location-County/City: Spartanburg / Spartanburg
F. EQC Regional Office: Upstate Spartanburg
G. Inspector's Name: Florence Hall
H. Owner's Name: Hillbrook HOA
I. Contact Person (if different from above): Alice Henderson
J. Dam Owner's or Contact Person's Phone Numbers: Home (864) 579 - 1803, Office () - , Other (864) 316 - 6387
K. Dam Owner's or Contact Person's mailing address: Address 1 211 Brian Court, Address 2 (optional), City Spartanburg, State SC, Zip Code 29307 -

Section II (Dam Condition)

General Condition Assessment (Select one of the following):

- a) Satisfactory [] b) Fair [x] c) Poor [] d) Unsatisfactory [] e) Not Rated []

Section III (Dam Inspection Checklist)

A. Dam Crest

- i. Vegetation (grass, trees weeds)? Crest is being maintained.
ii. Animal activity observed? None
iii. Any obvious alteration or repairs made? None
iv. Erosion noticed on crest? No
v. Any visible settlement, misalignment or cracks? No

Section III (Dam Inspection Checklist) continued

B. Upstream Slope

- i. Vegetation (grass, trees weeds)? Yes, the dam slope is visible but there are some large diameter trees on this side of the dam.
- ii. Animal activity observed? None
- iii. Any obvious alterations or repairs made? No
- iv. Erosion observed on upstream slope? No
- v. Settlement or cracks visible in slope? None observed.

C. Down Stream Slope

- i. Vegetation (grass, trees weeds)? Yes, the dam face is visible, but there are several large diameter trees on the face and ornamental grass.
- ii. Animal activity observed? None observed
- iii. Any obvious alterations or repairs made? No
- iv. Erosion observed on down stream slope? No
- v. Settlement or cracks visible in slope? Refer to vii.
- vi. Toe drains flowing? None observed.
- vii. Any seepage observed? If so, describe location, flow rate, and any turbidity or color within the flow: There is a wet spot on the right side dam face. Flow from the dam was not observed.

D. Primary Spillway

- i. Any visible deterioration of structure? No
- ii. Is there an obvious need to repair or replace trash rack? No
- iii. Any noticeable problems with debris? No
- iv. Is valve or gate present? Yes, and it is operable per conversation with the dam contact.

E. Outlet Pipe

- i. Any water visibly flowing or leaking outside of the discharge pipe? No
- ii. Describe any deflection or damage observed to the pipe: None observed
- iii. Visible condition of outlet channel: The pipe is completely enclosed with the exit point visible. Pipe was flowing.

F. Auxiliary (Emergency) Spillway

- i. Noticeable obstructions to flow? The spillway is in good condition.
- ii. Animal activity observed? None observed.
- iii. Any noticeable deterioration in the approach or discharge channel? Some erosion was observed at the end of the channel. Cinder blocks have been placed in the area of erosion and some vegetation was observed but not considered an issue at this time.
- iv. Any visible deterioration of structure's crest? No

F. Auxiliary (Emergency) Spillway continued

v. If applicable, any observed exposure of rebar reinforcement? N/A

vi. If applicable, any visible leakage below concrete spillway? N/A

H. Downstream/Hazard Class Issues

i. Any noticeable changes immediately downstream of the dam that affects the hazard classification?

This dam is the the highest hazard classification. There was no additional changes observed downstream.

I. Emergency Action Plan (EAP)

i. Emergency Action Plan provided by owner? A copy of the EAP template was provided to the contact during the inspection.

ii. Does EAP contains emergency alert notification plan? If so, when was it last updated?

iii. Does EAP contain specific actions to take if the dam has failed or is near failure? Actions listed in template.

Section IV (Conclusions)

General comments and recommendations:

Overall the dam is in good condition. Mrs. Henderson stated that visual inspections are performed routinely. Department personnel advised that the wet area, tree bases, and outlet structure should be monitored for any changes. Mrs. Henderson is familiar with opening and closing the gate valve. It is advisable that another homeowner be familiar with emergency procedures in her absence. A copy of a complete EAP should be provided to the Department 60 days from the receipt of the report.

Preliminary Dam Inspection Disclaimer:

The information contained in the preliminary inspection report is intended as an aid to identify those dams that require maintenance and/or repair actions to reduce their danger to human life or property only. It is not intended as professional engineering or consulting advice for conditions or situations present at individual dams. It is not a substitute for a detailed inspection, nor does it replace the need for services provided by registered professional engineers. If your dam is experiencing an unusual situation consult with engineering professionals to find an appropriate remedy. Preliminary inspections conducted by South Carolina Department of Health and Environmental Control (the Department) are provided "AS IS" and "as available", without warranties of any kind, either express or implied. Preliminary inspections consist only of a visual but technical examination of the dam and its appurtenant works. All findings are based solely on visual observations of the inspector at the time of the inspection. Common law holds that the storage of water is a hazardous activity and the Department does not assume any responsibility or risk for your actions or inactions. Dam owners are responsible for the safe operations and maintenance of their impoundment structures.



Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

CERTIFIED MAIL

May 5, 2014

S &M Partnership
Attn: Mr. John McBride and Mr. Jim Smith
PO Box 530
Spartanburg SC 29304

Ms. Betty Johnson
2932 Halstead Rd
Richmond, VA 23235

RE: Inspection of Smith Cantrell Dam, D-3987
Spartanburg County

Dear Mr. McBride, Mr Smith, and Ms. Johnson,

On April 25, 2014, Department personnel conducted a routine inspection of the Smith Cantrell Dam. A copy of the report is enclosed. The dam was given a "Poor" rating based on the following findings. Since this dam has multiple owners, the responsibilities of each owner is specified below:

Ms Johnson

1. The outlet structure is in good condition, but tree growth observed just above the pipe may compromise the structure, if not properly removed. Also, the toe drains are covered and not working properly. This may be the cause of seepage observed along the area located on S&M Partnership side of the dam just below the tree growth of the dam. An engineer's assessment should be performed to determine the best method of repair including tree removal.

S&M Partnership

1. Tree growth was observed on the right side of the dam. Due to the extensive growth of the trees, an engineer's assessment will need to be performed to determine if the trees should be removed.
2. Beaver activity was observed on the right side of the upstream slope. The beaver(s) and/or other rodents should be permanently removed. During the engineer's assessment, the damage performed by the rodents should be investigated and determine what repairs will be needed. Repairs may extend to the left side (Ms Johnson's side) of the dam that will need to be addressed, also.

Both property owners

1. The grass on the dam structure is maintained. Due to the time of year, the grass will need cutting and should be performed within 30 days.
2. **An updated Emergency Action Plan will need to be completed and a copy provided to the Department within 90 day from the receipt of this letter.**

Page 2 of 2
Smith Cantrell Dam Inspection
May 5, 2014

A copy of the EAP form was provided to Mr. James Smith, via email, along with a partial list of professional engineers. **Please notify the Department within 60 days for the determination made on the dam and a schedule for repairs/corrections.**

Should the dam experience difficulty, the appropriate emergency officials should be notified. The agencies listed in the emergency plan can provide assistance in determining what actions to take for protection of the public health and downstream property.

If you have any questions, please call me at 864-596-3800.

Sincerely,



Florence Hall
Regional Engineer Associate
Upstate BEHS Spartanburg Office

Cc: John Poole, P.E., SCDHEC Dam Safety Program



**Preliminary Inspection Report for South Carolina
Regulated Dams and Impoundment Structures
Regulations
R.72-1 through R.72-9**

Section I (Owner's Information)

A. Dam Number: D 3987 & Hazard Class C1 B. Name of Dam: Smith-Cantrell Dam
C. Inspection Date (04/25/2014) & Time: 1330 D. Date of Last Inspection: (05/01/2012)
E. Location-County/City: Spartanburg / Spartanburg F. EQC Regional Office: _____
G. Inspector's Name: Florence Hall and James West
H. Owner's Name: S & M Partnership / Betty Johnson
I. Contact Person (if different from above): Jack McBride, James Smith, and Betty Johnson
J. Dam Owner's or Contact Person's Phone Numbers: Home (804) 272 - 6523
Office (864) 699 - 8205
Other (864) 699 - 8208
K. Dam Owner's or Contact Person's mailing address:
Address 1 PO Box 530, Spartanburg, SC 29304 / 2932 Halstead Rd, Richmond, VA 23235
Address 2 (optional) _____
City _____ State _____ Zip Code _____

Section II (Dam Condition)

General Condition Assessment (Select one of the following):

- a) Satisfactory b) Fair c) Poor d) Unsatisfactory e) Not Rated

Section III (Dam Inspection Checklist)

A. Dam Crest

- i. Vegetation (grass, trees weeds)? Area is maintained, but grass will need cutting soon.
ii. Animal activity observed? Yes
iii. Any obvious alteration or repairs made? None
iv. Erosion noticed on crest? No
v. Any visible settlement, misalignment or cracks? No

Section III (Dam Inspection Checklist) continued

B. Upstream Slope

- i. Vegetation (grass, trees weeds)? Some vegetation observed, grass will need cutting soon.
- ii. Animal activity observed? Yes, beavers have burrowed into the side of the dam in several areas.
- iii. Any obvious alterations or repairs made? None
- iv. Erosion observed on upstream slope? Yes, around areas of animal activity
- v. Settlement or cracks visible in slope? No

C. Down Stream Slope

- i. Vegetation (grass, trees weeds)? Tree growth was observed on one section of the dam face.
- ii. Animal activity observed? None readily observed.
- iii. Any obvious alterations or repairs made? No
- iv. Erosion observed on down stream slope? No
- v. Settlement or cracks visible in slope? No
- vi. Toe drains flowing? No, drains have been covered.
- vii. Any seepage observed? If so, describe location, flow rate, and any turbidity or color within the flow: Yes, seepage was observed primarily in the area along the dam interface below the tree growth.

D. Primary Spillway

- i. Any visible deterioration of structure? No
- ii. Is there an obvious need to repair or replace trash rack? Trash rack not in place
- iii. Any noticeable problems with debris? No
- iv. Is valve or gate present? Yes

E. Outlet Pipe

- i. Any water visibly flowing or leaking outside of the discharge pipe? No
- ii. Describe any deflection or damage observed to the pipe: There is tree growth directly in line of the pipe.
- iii. Visible condition of outlet channel: Good condition.

F. Auxiliary (Emergency) Spillway

- i. Noticeable obstructions to flow? No
- ii. Animal activity observed? No
- iii. Any noticeable deterioration in the approach or discharge channel? None
- iv. Any visible deterioration of structure's crest? None

F. Auxiliary (Emergency) Spillway continued

v. If applicable, any observed exposure of rebar reinforcement? N/A

vi. If applicable, any visible leakage below concrete spillway? N/A

H. Downstream/Hazard Class Issues

i. Any noticeable changes immediately downstream of the dam that affects the hazard classification?

This dam is the highest classification.

I. Emergency Action Plan (EAP)

i. Emergency Action Plan provided by owner? Form provided and information requested via email

ii. Does EAP contains emergency alert notification plan? If so, when was it last updated?

iii. Does EAP contain specific actions to take if the dam has failed or is near failure?

Section IV (Conclusions)

General comments and recommendations:

The outlet structure is in good condition, but continual tree growth around the outlet structure may compromise the pipe.

Facing the dam: Seepage was observed at the bottom right side of the dam where the slope transitions. This may be due to the toe drains not working properly. The seepage is draining away from the dam but soft spots were observed just below the slope where significant tree growth was observed. Beaver activity was observed on the upstream side of the dam primarily on the right side of the dam, but other activity may be occurring throughout the structure.

The dam will need an assessment by a professional engineer to determine what repairs will be needed to the dam. This will include repairs to the toe drains/outlet structure and if tree removal can be performed based on the size of the tree trunks and location of the trees. Removal of the beaver(s) and other possible rodents will need to be performed by the owners.

The request for the Emergency Action Plan will be detailed in the cover letter.

05/05/14: Mr. James Smith informed the Department that the beaver had been removed.

Preliminary Dam Inspection Disclaimer:

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Preliminary Inspection Report for South Carolina Regulated Dams and Impoundment Structures Regulations R.72-1 through R.72-9

Section I (Owner's Information)

A. Dam Number: D ____ & Hazard Class ____ B. Name of Dam: _____
C. Inspection Date (_ / _ / 20 __) & Time: _____ D. Date of Last Inspection: (_ / _ / ____)
E. Location-County/City: _____ / _____ F. EQC Regional Office: _____
G. Inspector's Name: _____
H. Owner's Name: _____
I. Contact Person (if different from above): _____
J. Dam Owner's or Contact Person's Phone Numbers: Home (___) ____ - ____
Office (___) ____ - ____
Other (___) ____ - ____
K. Dam Owner's or Contact Person's mailing address:
Address 1 _____
Address 2 (optional) _____
City _____, State ____ Zip Code _____ - _____

Section II (Dam Condition)

General Condition Assessment (Select one of the following):

- a) Satisfactory b) Fair c) Poor d) Unsatisfactory e) Not Rated

Section III (Dam Inspection Checklist)

A. Dam Crest

- i. Vegetation (grass, trees weeds)? _____
ii. Animal activity observed? _____
iii. Any obvious alteration or repairs made? _____
iv. Erosion noticed on crest? _____
v. Any visible settlement, misalignment or cracks? _____

Section III (Dam Inspection Checklist) continued

B. Upstream Slope

- i. Vegetation (grass, trees weeds)? _____
- ii. Animal activity observed? _____
- iii. Any obvious alterations or repairs made? _____
- iv. Erosion observed on upstream slope? _____
- v. Settlement or cracks visible in slope? _____

C. Down Stream Slope

- i. Vegetation (grass, trees weeds)? _____
- ii. Animal activity observed? _____
- iii. Any obvious alterations or repairs made? _____
- iv. Erosion observed on down stream slope? _____
- v. Settlement or cracks visible in slope? _____
- vi. Toe drains flowing? _____
- vii. Any seepage observed? If so, describe location, flow rate, and any turbidity or color within the flow: _____

D. Primary Spillway

- i. Any visible deterioration of structure? _____
- ii. Is there an obvious need to repair or replace trash rack? _____
- iii. Any noticeable problems with debris? _____
- iv. Is valve or gate present? _____

E. Outlet Pipe

- i. Any water visibly flowing or leaking outside of the discharge pipe? _____
- ii. Describe any deflection or damage observed to the pipe: _____
- iii. Visible condition of outlet channel: _____

F. Auxiliary (Emergency) Spillway

- i. Noticeable obstructions to flow? _____
- ii. Animal activity observed? _____
- iii. Any noticeable deterioration in the approach or discharge channel? _____
- iv. Any visible deterioration of structure's crest? _____

F. Auxiliary (Emergency) Spillway continued

v. If applicable, any observed exposure of rebar reinforcement? _____

vi. If applicable, any visible leakage below concrete spillway? _____

H. Downstream/Hazard Class Issues

i. Any noticeable changes immediately downstream of the dam that affects the hazard classification? _____

I. Emergency Action Plan (EAP)

i. Emergency Action Plan provided by owner? _____

ii. Does EAP contains emergency alert notification plan? If so, when was it last updated? _____

iii. Does EAP contain specific actions to take if the dam has failed or is near failure? _____

Section IV (Conclusions)

General comments and recommendations:

Preliminary Dam Inspection Disclaimer:

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Preliminary Inspection Report for South Carolina Regulated Dams and
Impoundment Structures Regulations – DHEC 2604
R.72-1 through R.72-9

INSTRUCTIONS

Purpose: To satisfy the inspection requirements for high and significant hazard dams regulated by South Carolina Department of Health and Environmental Control. See R.72-1 through R. 72-9.

Who will complete the form: Regional engineers and inspectors engaged in the dams and reservoir safety program performing dam inspections.

Section I (Owner's Information):

- A) Dam Number; Enter the Dam's inventory number.
- B) Name of Dam; Enter the common name of dam found within EFIS.
- C) Inspection Month & Time; Enter the day, month, year, and time in which the inspections was performed.
- D) Date of Last Inspection; Enter the day, month, and year, in which the last inspection was performed.
- E) Location-County/City; Enter the county and city, if applicable, where the dam is located.
- F) EQC Regional Office; Enter the DHEC EQC Regional office that covers the area in which the dam is located.
- G) Inspector's Name: Enter the name of the person performing the inspection.
- H) Owner's Name: Enter the name of the person owning the dam. If there is multiple owners list them and their contact information in the "General comments and recommendations are in section IV.
- I) Contact Person; Enter the name of the person that represents the dam owner during the inspection. This person should be authorized to remedy any deficiencies found by the inspector.
- J) Dam Owner's or Contact Person's Phone Numbers; Enter the home, office, and other available numbers for the Dam owner or Contact person.
- K) Dam Owner's or Contact Person's mailing address; Enter the dam owner's or contact person's mailing address including city state and zip code.

Section II (Dam Condition):

Once the inspection is completed indicate the general condition of the dam. The assessment can be one of the following four categories:

- a) SATISFACTORY- No existing or potential dam safety deficiencies are recognized. Acceptable performance is expected under all loading conditions in accordance with state engineer's rules and regulations for dams or tolerable risk guidelines.

- b) FAIR- No existing dam safety deficiencies are recognized for normal loading conditions. Rare or extreme hydrologic and/or seismic events may result in a dam safety deficiency. Risk may be in the range to take further action.
- c) POOR- A dam safety deficiency is recognized for loading conditions, which may realistically occur. Remedial action is necessary. A POOR condition is used when uncertainties exist as to critical analysis parameters, which identify a potential dam safety deficiency. Further investigations and studies are necessary.
- d) UNSATISFACTORY- A dam safety deficiency is recognized that requires immediate or emergency remedial action for problem resolution.
- e) NOT RATED- This should only be used if it is not possible to assess to dam's condition due to site constraints on visibility on the day of inspection. If vegetation is a problem the owner should be ordered perform maintenance to remove it before the next visit.

Section III (Dam Inspection Checklist):

This section is self-explanatory and guides the inspector through the inspection process. Follow the dam inspection checklist to complete the inspection. Mark any deficiencies observed during the inspection. If there were the deficiencies reported during the last inspection cycle check to see if they were corrected. If items are not applicable to the inspection of the dam, mark not applicable. If the dams has issues that are not covered in this section of the form make note of them in section IV.

Section IV(Conclusions):

Use the space to list additional responsible parties (dam owners) and issues found during the inspection that are not addressed in section III, as well as any general comments and recommendations generated during the inspection.

Office Mechanisms and filing: The form must be sent to the Dam's owner(s) and filed with the Bureau of Water, Dams and Reservoir Safety Program, before the end of the following month after which the inspections were performed. The report will be filed in the Bureau of Water's file room and will be retained for at least three years after the Department certifies the removal of the inspected dam.



Preliminary Inspection Report for South Carolina Regulated Dams and Impoundment Structures Regulations R.72-1 through R.72-9

Section I (Owner's Information)

A. Dam Number: D ____ & Hazard Class ____ B. Name of Dam: _____
C. Inspection Date (_ / _ / 20 __) & Time: _____ D. Date of Last Inspection: (_ / _ / ____)
E. Location-County/City: _____ / _____ F. EQC Regional Office: _____
G. Inspector's Name: _____
H. Owner's Name: _____
I. Contact Person (if different from above): _____
J. Dam Owner's or Contact Person's Phone Numbers: Home (___) ____ - ____
Office (___) ____ - ____
Other (___) ____ - ____
K. Dam Owner's or Contact Person's mailing address:
Address 1 _____
Address 2 (optional) _____
City _____, State ____ Zip Code _____ - _____

Section II (Dam Condition)

General Condition Assessment (Select one of the following):

- a) Satisfactory b) Fair c) Poor d) Unsatisfactory e) Not Rated

Section III (Dam Inspection Checklist)

A. Dam Crest

- i. Vegetation (grass, trees weeds)? _____
ii. Animal activity observed? _____
iii. Any obvious alteration or repairs made? _____
iv. Erosion noticed on crest? _____
v. Any visible settlement, misalignment or cracks? _____

Section III (Dam Inspection Checklist) continued

B. Upstream Slope

- i. Vegetation (grass, trees weeds)? _____
- ii. Animal activity observed? _____
- iii. Any obvious alterations or repairs made? _____
- iv. Erosion observed on upstream slope? _____
- v. Settlement or cracks visible in slope? _____

C. Down Stream Slope

- i. Vegetation (grass, trees weeds)? _____
- ii. Animal activity observed? _____
- iii. Any obvious alterations or repairs made? _____
- iv. Erosion observed on down stream slope? _____
- v. Settlement or cracks visible in slope? _____
- vi. Toe drains flowing? _____
- vii. Any seepage observed? If so, describe location, flow rate, and any turbidity or color within the flow: _____

D. Primary Spillway

- i. Any visible deterioration of structure? _____
- ii. Is there an obvious need to repair or replace trash rack? _____
- iii. Any noticeable problems with debris? _____
- iv. Is valve or gate present? _____

E. Outlet Pipe

- i. Any water visibly flowing or leaking outside of the discharge pipe? _____
- ii. Describe any deflection or damage observed to the pipe: _____
- iii. Visible condition of outlet channel: _____

F. Auxiliary (Emergency) Spillway

- i. Noticeable obstructions to flow? _____
- ii. Animal activity observed? _____
- iii. Any noticeable deterioration in the approach or discharge channel? _____
- iv. Any visible deterioration of structure's crest? _____

F. Auxiliary (Emergency) Spillway continued

v. If applicable, any observed exposure of rebar reinforcement? _____

vi. If applicable, any visible leakage below concrete spillway? _____

H. Downstream/Hazard Class Issues

i. Any noticeable changes immediately downstream of the dam that affects the hazard classification? _____

I. Emergency Action Plan (EAP)

i. Emergency Action Plan provided by owner? _____

ii. Does EAP contains emergency alert notification plan? If so, when was it last updated? _____

iii. Does EAP contain specific actions to take if the dam has failed or is near failure? _____

Section IV (Conclusions)

General comments and recommendations:

Preliminary Dam Inspection Disclaimer:

The information contained in the preliminary inspection report is intended as an aid to identify those dams that require maintenance and/or repair actions to reduce their danger to human life or property only. It is not intended as professional engineering or consulting advice for conditions or situations present at individual dams. It is not a substitute for a detailed inspection, nor does it replace the need for services provided by registered professional engineers. If your dam is experiencing an unusual situation consult with engineering professionals to find an appropriate remedy. Preliminary inspections conducted by South Carolina Department of Health and Environmental Control (the Department) are provided "AS IS" and "as available", without warranties of any kind, either express or implied. Preliminary inspections consist only of a visual but technical examination of the dam and its appurtenant works. All findings are based solely on visual observations of the inspector at the time of the inspection. Common law holds that the storage of water is a hazardous activity and the Department does not assume any responsibility or risk for your actions or inactions. Dam owners are responsible for the safe operations and maintenance of their impoundment structures.

Preliminary Inspection Report for South Carolina Regulated Dams and
Impoundment Structures Regulations – DHEC 2604
R.72-1 through R.72-9

INSTRUCTIONS

Purpose: To satisfy the inspection requirements for high and significant hazard dams regulated by South Carolina Department of Health and Environmental Control. See R.72-1 through R. 72-9.

Who will complete the form: Regional engineers and inspectors engaged in the dams and reservoir safety program performing dam inspections.

Section I (Owner's Information):

- A) Dam Number; Enter the Dam's inventory number.
- B) Name of Dam; Enter the common name of dam found within EFIS.
- C) Inspection Month & Time; Enter the day, month, year, and time in which the inspections was performed.
- D) Date of Last Inspection; Enter the day, month, and year, in which the last inspection was performed.
- E) Location-County/City; Enter the county and city, if applicable, where the dam is located.
- F) EQC Regional Office; Enter the DHEC EQC Regional office that covers the area in which the dam is located.
- G) Inspector's Name: Enter the name of the person performing the inspection.
- H) Owner's Name: Enter the name of the person owning the dam. If there is multiple owners list them and their contact information in the "General comments and recommendations are in section IV.
- I) Contact Person; Enter the name of the person that represents the dam owner during the inspection. This person should be authorized to remedy any deficiencies found by the inspector.
- J) Dam Owner's or Contact Person's Phone Numbers; Enter the home, office, and other available numbers for the Dam owner or Contact person.
- K) Dam Owner's or Contact Person's mailing address; Enter the dam owner's or contact person's mailing address including city state and zip code.

Section II (Dam Condition):

Once the inspection is completed indicate the general condition of the dam. The assessment can be one of the following four categories:

- a) SATISFACTORY- No existing or potential dam safety deficiencies are recognized. Acceptable performance is expected under all loading conditions in accordance with state engineer's rules and regulations for dams or tolerable risk guidelines.

- b) FAIR- No existing dam safety deficiencies are recognized for normal loading conditions. Rare or extreme hydrologic and/or seismic events may result in a dam safety deficiency. Risk may be in the range to take further action.
- c) POOR- A dam safety deficiency is recognized for loading conditions, which may realistically occur. Remedial action is necessary. A POOR condition is used when uncertainties exist as to critical analysis parameters, which identify a potential dam safety deficiency. Further investigations and studies are necessary.
- d) UNSATISFACTORY- A dam safety deficiency is recognized that requires immediate or emergency remedial action for problem resolution.
- e) NOT RATED- This should only be used if it is not possible to assess to dam's condition due to site constraints on visibility on the day of inspection. If vegetation is a problem the owner should be ordered perform maintenance to remove it before the next visit.

Section III (Dam Inspection Checklist):

This section is self-explanatory and guides the inspector through the inspection process. Follow the dam inspection checklist to complete the inspection. Mark any deficiencies observed during the inspection. If there were the deficiencies reported during the last inspection cycle check to see if they were corrected. If items are not applicable to the inspection of the dam, mark not applicable. If the dams has issues that are not covered in this section of the form make note of them in section IV.

Section IV(Conclusions):

Use the space to list additional responsible parties (dam owners) and issues found during the inspection that are not addressed in section III, as well as any general comments and recommendations generated during the inspection.

Office Mechanisms and filing: The form must be sent to the Dam's owner(s) and filed with the Bureau of Water, Dams and Reservoir Safety Program, before the end of the following month after which the inspections were performed. The report will be filed in the Bureau of Water's file room and will be retained for at least three years after the Department certifies the removal of the inspected dam.



Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

CERTIFIED MAIL 7010 2780 0000 0899 0302

April 24, 2014

Lake Emory Development
1002 S. Pine Street
Spartanburg, SC 29302

RE: Inspection of **Dam D-4482, Lake Emory Dam**, Spartanburg County

To Whom It May Concern:

On April 16, 2014, Department personnel conducted a routine inspection of the Lake Emory Dam. A copy of the report is enclosed. The dam was given a "Fair" rating based on the following findings:

1. Erosion was observed along the water's edge on the upstream slope. This may be due to wave action occurring from the lake. It is recommended that the upstream slope be monitored for additional erosion. If erosion continues, the slope will need to be properly stabilized.
2. Erosion and settlement was observed on the downstream slope just above the outfall structure and along the left side of the structure. These areas need to be repaired and restabilized with grass.
3. Pine trees and wood debris observed in the auxiliary (emergency) spillway should be removed. The spillway is designed for a heavy flow event to prevent water from overtopping the dam. Obstructions in the dam will reduce the necessary flow that is needed in an emergency situation.

A partial list of professional engineers and contractors are in enclosed for your convenience. **Corrections must be made within 90 days from the receipt of this letter.**


Also, an updated copy of the Emergency Action Plan must be submitted to the Department within 60 days from the receipt of this letter. A form has been enclosed. Please, refer to the September 21, 2011 letter from John Poole regarding Emergency Action Plan requirements. A copy of the letter was sent to the dam contact at that time.

Should the dam experience difficulty, the appropriate emergency officials should be notified. The agencies listed in the emergency plan can provide assistance in determining what actions to take for protection of the public health and downstream property.

Page 2 of 2
Lake Emory Dam Inspection
April 24, 2014

If you have any questions, please call me at 864-596-3800.

Sincerely

A handwritten signature in cursive script, appearing to read "Florence Hall".

Florence Hall
Regional Engineer Associate
Upstate BEHS Spartanburg Office

Enclosure

Cc: John Poole, Bureau of Water – Dam Safety Program



Preliminary Inspection Report for South Carolina Regulated Dams and Impoundment Structures Regulations R.72-1 through R.72-9

Section I (Owner's Information)

A. Dam Number: D 4482 & Hazard Class C1 B. Name of Dam: Lake Emory Dam
C. Inspection Date (04/16/2014) & Time: 1355 D. Date of Last Inspection: (04/30/2012)
E. Location-County/City: Spartanburg / Inman F. EQC Regional Office: Upstae BEHS Spartanburg
G. Inspector's Name: Florence B. Hall
H. Owner's Name: Lake Emory Development
I. Contact Person (if different from above):
J. Dam Owner's or Contact Person's Phone Numbers: Home Office Other
K. Dam Owner's or Contact Person's mailing address: Address 1 1006 South Pine Street Address 2 (optional) City Spartanburg State SC Zip Code 29302

Section II (Dam Condition)

General Condition Assessment (Select one of the following):

- a) Satisfactory b) Fair c) Poor d) Unsatisfactory e) Not Rated

Section III (Dam Inspection Checklist)

A. Dam Crest

- i. Vegetation (grass, trees weeds)? maintained
ii. Animal activity observed? None
iii. Any obvious alteration or repairs made? No
iv. Erosion noticed on crest? No
v. Any visible settlement, misalignment or cracks? No

Section III (Dam Inspection Checklist) continued

B. Upstream Slope

- i. Vegetation (grass, trees weeds)? No
- ii. Animal activity observed? No
- iii. Any obvious alterations or repairs made? No
- iv. Erosion observed on upstream slope? Yes, some erosion was observed at the waters edge in various places
- v. Settlement or cracks visible in slope? No

C. Down Stream Slope

- i. Vegetation (grass, trees weeds)? Maintained
- ii. Animal activity observed? No
- iii. Any obvious alterations or repairs made? No
- iv. Erosion observed on down stream slope? Yes, erosion observed just above the outfall structure and to the left of the structure
- v. Settlement or cracks visible in slope? Yes, just above the outfall
- vi. Toe drains flowing? Yes
- vii. Any seepage observed? If so, describe location, flow rate, and any turbidity or color within the flow: No

D. Primary Spillway

- i. Any visible deterioration of structure? No
- ii. Is there an obvious need to repair or replace trash rack? No
- iii. Any noticeable problems with debris? Some debris observed
- iv. Is valve or gate present? Yes

E. Outlet Pipe

- i. Any water visibly flowing or leaking outside of the discharge pipe? No
- ii. Describe any deflection or damage observed to the pipe: None visible
- iii. Visible condition of outlet channel: Satisfactory

F. Auxiliary (Emergency) Spillway

- i. Noticeable obstructions to flow? Yes, pine trees and wood debris observed in spillway
- ii. Animal activity observed? No
- iii. Any noticeable deterioration in the approach or discharge channel? No
- iv. Any visible deterioration of structure's crest? No

F. Auxiliary (Emergency) Spillway continued

v. If applicable, any observed exposure of rebar reinforcement? N/A

vi. If applicable, any visible leakage below concrete spillway? N/A

H. Downstream/Hazard Class Issues

i. Any noticeable changes immediately downstream of the dam that affects the hazard classification? _____

Dam is highest hazard classification _____

I. Emergency Action Plan (EAP)

i. Emergency Action Plan provided by owner? Request in cover letter.

ii. Does EAP contains emergency alert notification plan? If so, when was it last updated? _____

iii. Does EAP contain specific actions to take if the dam has failed or is near failure? _____

Section IV (Conclusions)

General comments and recommendations:

Erosion and settlement were observed on the downstream slope around the outlet structure. This will worsen with time; therefore, repairs should be performed to the area in question. Trees and debris in the auxillary spill will need to be removed from the channel. Some erosion was observed along the waters edge on the upstream slope in various places
It is recommended that this area is monitored for further erosion.

Preliminary Dam Inspection Disclaimer:

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