



WALDEN, ASHWORTH & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 6462 • MARIETTA, GEORGIA 30065 • 770/956-7879

June 12, 2023

Lake Spivey Civic Association
Mr. Bob Nash, President
3301 Bay View Drive
Lake Spivey, Georgia 30236

RE: SPIVEY LAKE DAM INSPECTION (2nd Quarter)
WA&A J.O. 4300300

Dear Mr. Nash:

We have completed our visual inspection for the 2nd quarter of the Spivey Lake Dam in Henry County, Georgia. The attached inspection forms and pictures present the results of our visual inspection. This letter includes a summary of our observations, our preliminary conclusions and recommendations.

The dam was visited on June 09, 2023. Conditions were clear and warm. Visual observations of the dam and appurtenant structures were made from walking along the top of the dam, portions of both the upstream and downstream slopes, and along the toe of the dam. The primary spillway was observed from the downstream slope and crest of the dam.

The lake was at normal pool at the time of our inspection. Our ability to inspect the upstream slope was limited due to water in the reservoir. The portion of the slope that is visible above the water line is covered with adequate vegetation that appears to be in good condition. Large boulders and rip rap were observed along the normal pool shoreline to provide protection to the embankment from wave action when the reservoir is at normal pool.

The upstream slope at the shoreline/boulders is steeper than 3:1. No unusual movement on the slope was observed since the previous inspection. No slides or sloughs were observed and the abutment contacts looked good. The steep upstream slope should continue to be monitored for any movement or erosion. An animal burrow was observed at the top of the rip rap and boulders on the right side of the dam approximately 300 feet to the left of the right abutment. This area needs filled in and repaired. There was some small trees/brush located along the top of the rip rap wave protection near the concrete labyrinth spillway. These areas should be cleared.

The horizontal and vertical alignment of the earth embankment appears to be generally good. The top of the dam is vegetated and appears to be in good condition with no

cracking observed. The crest is covered with a good stand of maintained grass. No sinkholes were observed. The abutment contacts were good.

The downstream slope of the dam is covered with maintained vegetation. During this inspection the grass had grown to waist level and needs to be cut. The slope appears to be approximately 3 horizontal on 1 vertical (3:1). No signs of sloughing or sinkholes were observed. The wet area which was observed to the right of the low-level drain outlet approximately 20 feet up the slope near the toe of the dam continues to be wet and soft indicating seepage. There was no significant change in the area since the previous inspection. Monitoring wells have been installed at the crest of the dam to monitor the seepage levels in this area. This area should continue to be monitored closely for any significant changes. Measurements were taken of the permanent monitoring wells. See the attached well readings for additional information.

Seepage drains are located at the downstream end of the dam and on the right side of the drawdown outlet. The seepage drains had clear unobstructed flow. However, vegetation has begun to encroach on the outlets and these areas need cleared. Flow measurements were taken from the drains. There are also seepage drains along the primary labyrinth weir spillway on the downstream side of the dam. These drains are to collect any seepage near the primary spillway chute. These drain outlets had no or minimal flow.

The water level of the lake is controlled by the primary spillway which consists of a concrete labyrinth weir spillway, concrete chute, and a stepped stilling basin. There is also a gate located on the labyrinth weir wall of the primary spillway. This gate is a means to lower the lake level for maintenance, storm events, etc. At the time of this inspection this gate was closed and the lake level was at normal pool elevation.

The primary spillway structure appeared to be in good condition. The concrete chute and stepped stilling basin empty into a riprap lined channel. The channel is free from encroaching vegetation and appears to be providing adequate dissipation of the energy from flows discharging through the chute and stilling basin. The primary spillway had flow making it difficult to visually inspect much of the spillway slab closely.

The drawdown outlet works structure is located near the center of the dam. No detailed observations were possible of the drawdown structure because it is below the grade and/or the water surface. No flow was observed from the outlet pipes. The low-level outlet pipes terminate at the downstream toe of the dam and discharge into a rip-rap lined channel. The channel appears to be providing adequate dissipation of the energy from flows discharging through the drain and seepage pipes.

The secondary or emergency spillway consists of a concrete weir and chute channel located in the left abutment. The spillway appears to be generally in good condition with some minor cracking. The approach is unobstructed. Removal of any vegetation should

continually be a part of the maintenance of the dam. There continues to be some possible seepage coming through some of the cracks in the spillway. There was no change since the previous inspection. These areas need to continue to be monitored. No evidence of frequent activation of this spillway was observed.

It is important to note that the condition of any dam depends on numerous and constantly changing internal and external conditions and is evolutionary in nature. It cannot be assumed that the present conditions of any dam will continue to represent its condition at some point in the future.

Based on our visual inspection, the dam needs some remedial work. We recommend that the following steps be taken:

1. Continue to monitor the observation wells to look for any noticeable changes in seepage through the dam.
2. Remove any vegetation in the emergency spillway.
3. Continue to monitor seepage coming through the cracks in the concrete chute emergency spillway.
4. Repair animal burrow located at the top of the rip rap wave protection located approximately 300 feet to the left of the right abutment of the dam.
5. Clear away any trees/brush along the rip rap wave protection.
6. Mow the downstream slope and left side of the dam.
7. Clear any encroaching vegetation from around the toe drain outlets.

If you have any questions concerning our inspection, please do not hesitate to call me.

Sincerely,



Jason Rapplean, P.E.
Senior Engineer
Attachments





WALDEN, ASHWORTH & ASSOCIATES, INC.
SPIVEY LAKE DAM VISUAL INSPECTION

PHOTO LOG

Date: 06/09/23
Project: Spivey Lake Dam Visual Inspection
Project No.: 4300300
Project Location: Henry County, Georgia
Report By: Jason Rapplean, P.E., E.O.R.

Description:

Crest of dam looking
towards right
abutment.



Description:

Upstream slope of dam
with boulder shore
protection.





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SPIVEY LAKE DAM VISUAL INSPECTION

PHOTO LOG

Date: 06/09/23
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Project No.: 4300300
Project Location: Henry County, Georgia
Report By: Jason Rapplean, P.E., E.O.R.

Description:

Upstream slope of dam with boulder shore protection.



Description:

Upstream slope of dam. Note trees and brush beginning to grow along rip rap wave protection.





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SPIVEY LAKE DAM VISUAL INSPECTION

PHOTO LOG

Date: 06/09/23
Project: Spivey Lake Dam Visual Inspection
Project No.: 4300300
Project Location: Henry County, Georgia
Report By: Jason Rapplean, P.E., E.O.R.

Description:

Animal burrow at top of rip rap wave protection.



Description:

Crest and downstream embankment looking towards the left abutment. Note overgrown grass that needs mowed.





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SPIVEY LAKE DAM VISUAL INSPECTION

PHOTO LOG

Date: 06/09/23
Project: Spivey Lake Dam Visual Inspection
Project No.: 4300300
Project Location: Henry County, Georgia
Report By: Jason Rapplean, P.E., E.O.R.

Description:

Drawdown structure.



Description:

Drawdown/Low Level
Pipe outlet and toe
drain J.





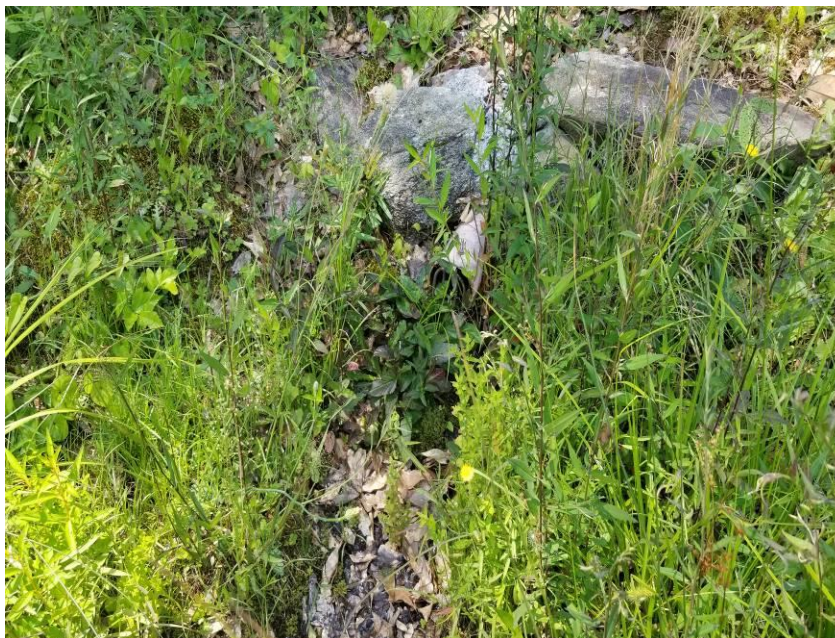
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Report By: Jason Rapplean, P.E., E.O.R.

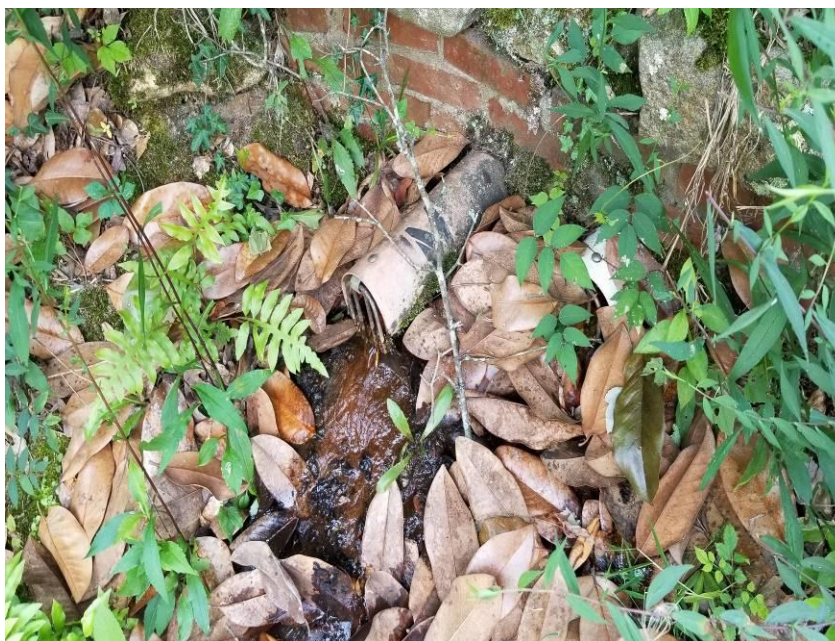
Description:

Toe drain K outlet near low level drain. Note vegetation beginning to encroach on outlet.



Description:

Toe drain L & M outlet near low level drain. Note vegetation beginning to encroach on outlet.





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SPIVEY LAKE DAM VISUAL INSPECTION

PHOTO LOG

Date: 06/09/23
Project: Spivey Lake Dam Visual Inspection
Project No.: 4300300
Project Location: Henry County, Georgia
Report By: Jason Rapplean, P.E., E.O.R.

Description:

Seepage area near toe of dam. Note the downstream embankment needs mowed.



Description:

Seepage area near toe of dam. Note observation wells in the area. Note the downstream embankment needs mowed.





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SPIVEY LAKE DAM VISUAL INSPECTION

PHOTO LOG

Date: 06/09/23
Project: Spivey Lake Dam Visual Inspection
Project No.: 4300300
Project Location: Henry County, Georgia
Report By: Jason Rapplean, P.E., E.O.R.

Description:

Principal spillway.
Concrete labyrinth
spillway and chute.



Description:

Principal spillway.
Concrete labyrinth
spillway and chute.





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SPIVEY LAKE DAM VISUAL INSPECTION

PHOTO LOG

Date: 06/09/23
Project: Spivey Lake Dam Visual Inspection
Project No.: 4300300
Project Location: Henry County, Georgia
Report By: Jason Rapplean, P.E., E.O.R.

Description:

Principal and
emergency spillway.
Concrete chute outlet.



Description:

Labyrinth weir walls..





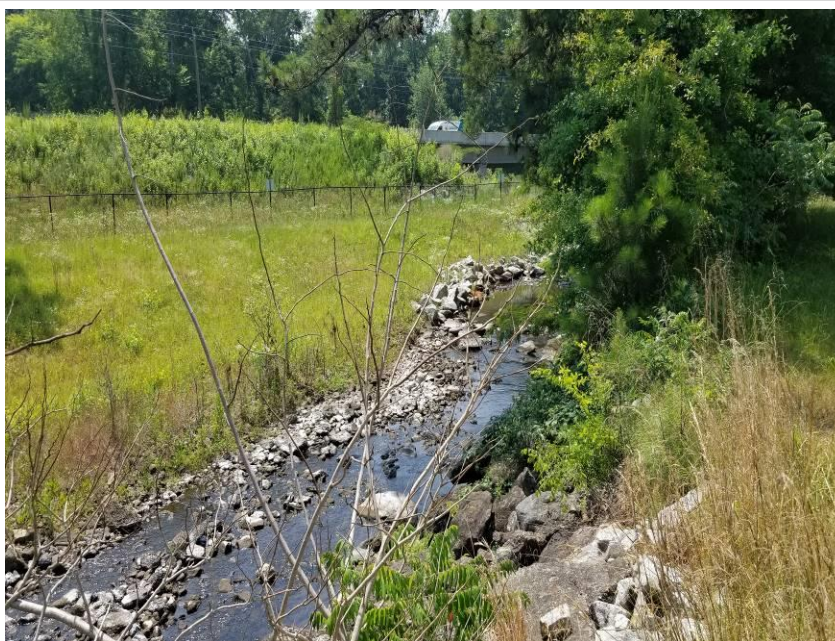
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SPIVEY LAKE DAM VISUAL INSPECTION

PHOTO LOG

Date: 06/09/23
Project: Spivey Lake Dam Visual Inspection
Project No.: 4300300
Project Location: Henry County, Georgia
Report By: Jason Rapplean, P.E., E.O.R.

Description:

Downstream exit
channel.



Description:

Concrete emergency
spillway chute,
downstream
embankment on left
side of dam.





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Date: 06/09/23
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Project No.: 4300300
Project Location: Henry County, Georgia
Report By: Jason Rapplean, P.E., E.O.R.

Description:

Concrete emergency
spillway chute,
downstream
embankment on left
side of dam.



Description:

Concrete emergency
spillway chute weir
wall.





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SPIVEY LAKE DAM VISUAL INSPECTION

PHOTO LOG

Date: 06/09/23
Project: Spivey Lake Dam Visual Inspection
Project No.: 4300300
Project Location: Henry County, Georgia
Report By: Jason Rapplean, P.E., E.O.R.

Description:

Concrete emergency
spillway chute outlet.



Description:

Concrete emergency
spillway chute,
downstream
embankment on left
side of dam. Note
seepage at cracks.



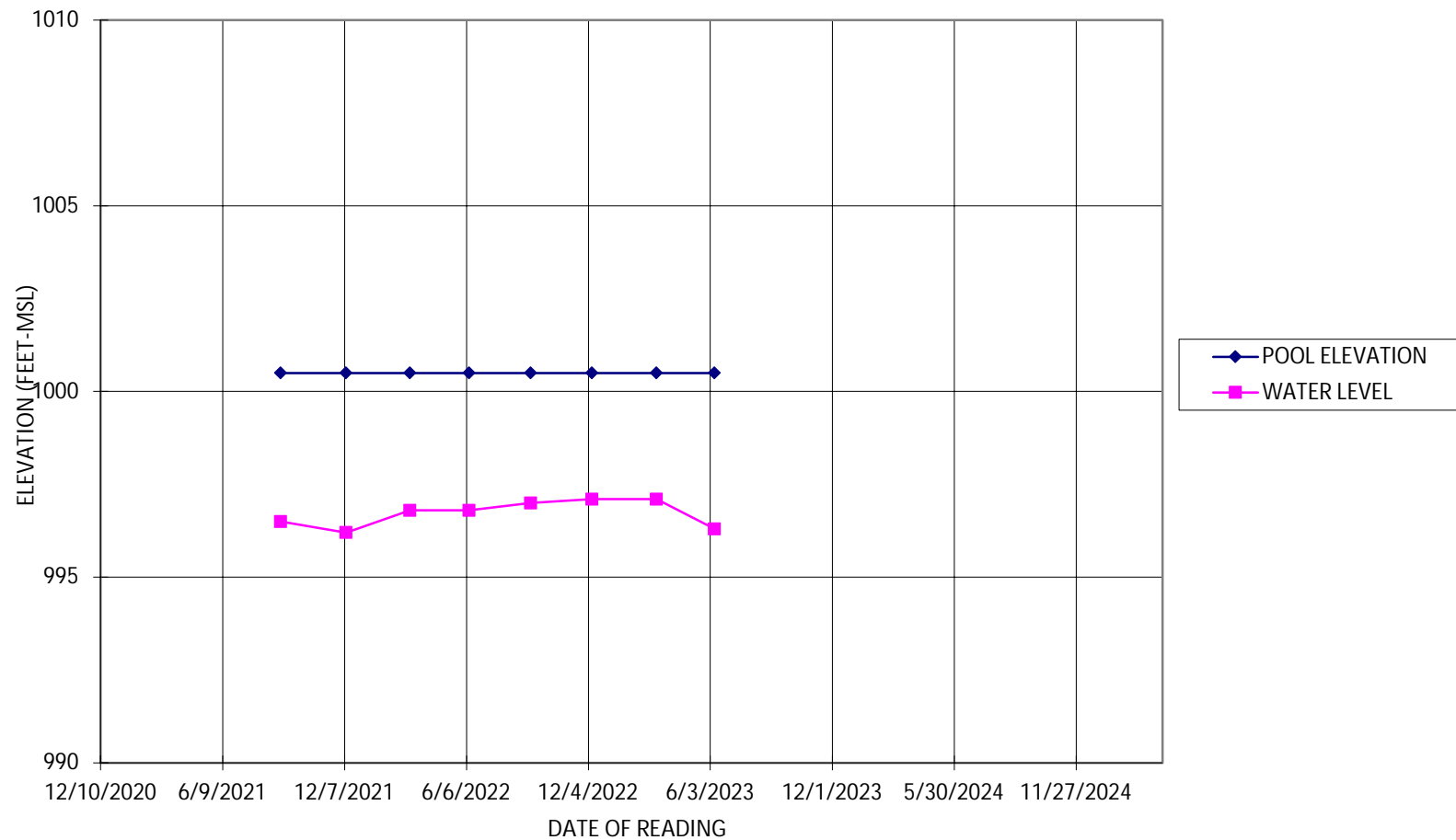
OBSERVATION WELL WATER LEVEL DATA

[illegible]

OBSERVATION WELL WATER LEVEL DATA

LAKE SPIVEY DAM

WELL NUMBER W-1



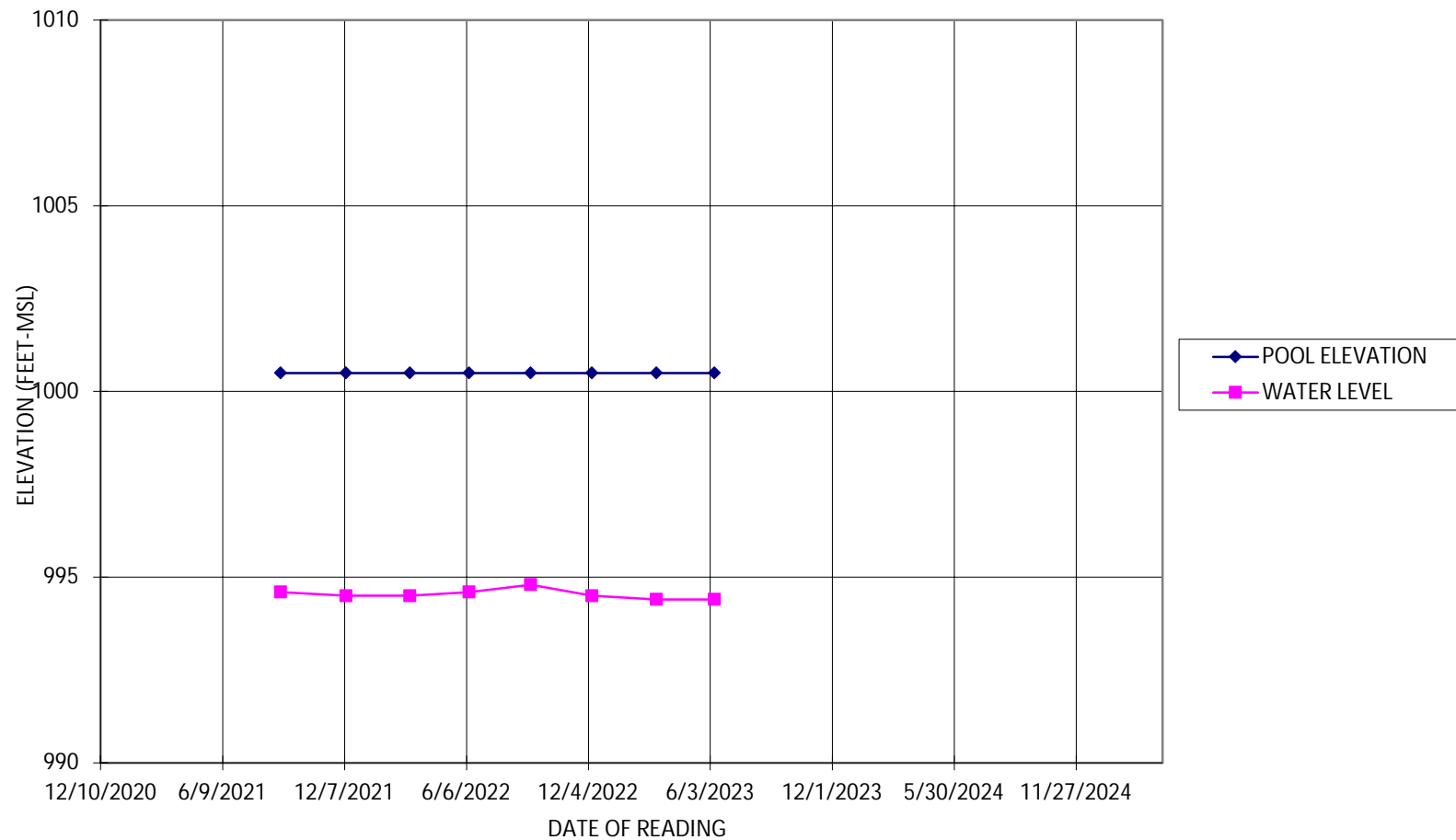
OBSERVATION WELL WATER LEVEL DATA

[illegible]

OBSERVATION WELL WATER LEVEL DATA

LAKE SPIVEY DAM

WELL NUMBER W-2



Embankment (Earth) Dam Inspection Form

Name of Dam: Spivey Lake Dam Date: 06-09-2023
Location of Dam (County): Henry Weather: Clear, Warm
Inspected by (Print Name): Jason Rapplean

If an inspection item requires further action on your part, place a check mark to the left of the number of the item

A. Crest (refer to Glossary for description)

- ☐ 1. How would you describe the vegetation on the crest? (Check all that apply)
Recently Mowed _____ Overgrown _____ Good Cover ☒ Sparse _____
Other/Corrective Action (describe): _____
- ☐ 2. Are there any trees or other inappropriate or excessive vegetation on the crest? Yes _____ No ☒
If yes, describe (type of vegetation, size, location, etc.)/Corrective Action: _____
- ☐ 3. Is there a paved road or driveway on the crest? Yes _____ No ☒
If yes, describe the condition (for example, good condition, numerous cracks, newly paved)/Corrective Action: _____
- ☐ 4. Are there any depressions, ruts or holes on the crest? Yes _____ No ☒
If yes, describe (size, location, etc.)/Corrective Action: _____
- ☐ 5. Are there any cracks on the crest? Yes _____ No ☒
If yes, describe (length and width, location, direction of cracking, etc.)/Corrective Action: _____
- ☐ 6. Other observations on the crest/Corrective Action: _____

B. Upstream Slope (refer to Glossary for description)

1. What is the reservoir level today? At Normal Pool ☒ Above Normal Pool _____ Feet Below Normal Pool _____ Feet
- ☐ 2. How would you describe the vegetation on the upstream slope? (Check all that apply)
Recently Mowed _____ Overgrown _____ Good Cover ☒ Sparse _____
Other/Corrective Action (describe): _____
- ☐ 3. Are there any trees or other inappropriate or excessive vegetation on the slope? Yes ☒ No _____
If yes, describe (type of vegetation, size, location, etc.)/Corrective Action: minor trees Near Spillway
- ☐ 4. Are there any depressions, bulges, ruts or holes (such as animal burrows) on the slope? Yes ☒ No _____
If yes, describe (size, location, etc.)/Corrective Action: 300 ft left of right abutment @ top of rocks
- ☐ 5. Are there any eroded areas on the slope (such as wave erosion along the shoreline)? Yes _____ No ☒
If yes, describe (size of area, location, severity, etc.)/Corrective Action: _____
- ☐ 6. Are there any cracks, sloughs or slides (vertical cliffs) on the slope? Yes ☒ No ☒
If yes, describe (length, width, height, location, etc.)/Corrective Action: Boulder slopes Steep

Upstream Slope (continued)

- ☐ 7. Is there any type of slope protection along the shoreline (such as riprap)? Yes ☒ No ☐
If yes, describe what type and its condition (for example, riprap - adequate, inadequate, sparse)/Corrective Action: Boulder/Riprap - adequate
- ☐ 8. Other observations on the upstream slope/Corrective Action: _____

C. Downstream Slope (refer to Glossary for description)

- ☐ 1. How would you describe the vegetation on the downstream slope? (Check all that apply)
Recently Mowed ☐ Overgrown ☒ Good Cover ☒ Sparse ☐
Other/Corrective Action (describe): Needs mowed
- ☐ 2. Are there any trees or other inappropriate or excessive vegetation on the slope? Yes ☐ No ☒
If yes, describe (type of vegetation, size, location, etc.)/Corrective Action: _____
- ☐ 3. Are there any depressions, bulges, ruts or holes (such as animal burrows) on the slope? Yes ☐ No ☒
If yes, describe (size, location, etc.)/Corrective Action: _____
- ☐ 4. Are there any eroded areas on the slope (such as along abutment contacts)? Yes ☐ No ☒
If yes, describe (size of area, location, severity, etc.)/Corrective Action: _____
- ☐ 5. Are there any cracks, sloughs or slides (vertical cliffs) on the slope? Yes ☐ No ☒
If yes, describe (length, width, height, location, etc.)/Corrective Action: _____
- ☐ 6. Are there any wet areas or areas of hydrophilic (lush, water-loving) vegetation? Yes ☒ No ☐
If yes, describe (size of area, location, etc.)/Corrective Action: Near toe no change
- ☐ 7. Do any wet areas indicate seepage through the dam (such as rust-colored, stained water)? Yes ☒ No ☐ N/A ☐
If yes, describe (for example, new area of seepage, no change from past observations, size of area, location) /Corrective Action: Near toe no change
- ☐ 8. Are there any leaks (flowing water) from the slope or beyond the toe of the dam? Yes ☐ No ☒
If yes, describe (location, rate of flow, turbidity of flow)/Corrective Action: _____
- ☐ 9. Other observations on the downstream slope/Corrective Action: _____

D. Plunge Pool (refer to Glossary for description)

- ☐ 1. Is there any type of erosion protection around the plunge pool (such as riprap)? Yes ☒ No ☐
If yes, describe what type and its condition (for example, riprap - adequate, inadequate, obstructed by vegetation) /Corrective Action: rip rap adequate
- ☐ 2. Is there any erosion and or seeps around or going into the plunge pool? Yes ☐ No ☒
If yes, describe (size of area, location, severity, etc.) /Corrective Action: _____
- ☐ 3. Other observations around the plunge pool/Corrective Action: _____

Embankment (Earth) Dam Inspection Form (continued)

Name of Dam: Spivey Lake Dam

Date: 06-09-2023

E. Principal and Emergency Spillways (refer to Glossary for description)

- ☐ 1. What types of spillways does the dam have (such as corrugated metal, concrete or siphon pipe; concrete or earth channel)?

Principal Spillway conc. labyrinth

Emergency Spillway conc. chute

Other/Corrective Action: _____

- ☐ 2. Has the emergency spillway activated (had flow) since the last inspection? Yes _____ No ✓

If yes describe (date(s) of flow, reason for activation, depth of flow) /Corrective Action: _____

- ☐ 3. For pipe spillways, is the intake obstructed in any way (such as with excessive debris)? Yes _____ No ✓

If yes, describe (type of debris, reason for obstruction, etc.) /Corrective Action: _____

- ☐ 4. For pipe spillways, what is the condition of any trash racks (for example, adequate, inadequate, damaged)? /Corrective Action: _____

adequate

- ☐ 5. For pipe spillways, are there any visible cracks, separations or holes in the pipe(s) (intake or outlet)? Yes _____ No ✓

If yes, describe (location, width of crack or separation, etc.) /Corrective Action: _____

- ☐ 6. For pipe spillways, are there any apparent leaks in the pipe(s)? Yes _____ No ✓

If yes, describe (location, rate of flow from leak, etc.) /Corrective Action: _____

7. For pipe spillways, how would you describe the overall condition of the pipe(s)? (Check all that apply)

Functioning Normally ✓ Not Functional _____ Deteriorated _____ Damaged _____ Adequate _____ Inadequate _____

- ☐ 8. For concrete or earth channel spillways, is the entrance or channel obstructed in any way? Yes _____ No ✓

If yes, describe (type of obstruction, location, etc.) /Corrective Action: _____

- ☐ 9. For earth channel spillways, how would you describe the vegetation in the spillway? (Check all that apply)

Recently Mowed _____ Overgrown _____ Good Cover ✓ Sparse _____

Other (describe) /Corrective Action: _____

- ☐ 10. For earth channel spillways, are there any trees or other inappropriate vegetation in the spillway? Yes _____ No ✓

If yes, describe (type of vegetation, size, location, etc.) /Corrective Action: _____

- ☐ 11. For earth channel spillways, are there any eroded areas in the spillway? Yes _____ No ✓

If yes, describe (size of area, location, severity, etc.) /Corrective Action: _____

- ☐ 12. For concrete channel spillways, are there any cracks or holes in the spillway? Yes ✓ No _____

If yes, describe (width of crack or hole, location, etc.) /Corrective Action: minor cracks

No change

- ☐ 13. For concrete channel spillways, are there any leaks or evidence of undermining (flow under the concrete)? Yes _____ No ✓

If yes, describe (location, rate of flow from leak, indicators of undermining, etc.) /Corrective Action: _____

Principal and Emergency Spillways (continued)

14. For earth or concrete channel spillways, how would you describe the overall condition of the spillway? (Check all that apply)

Functioning Normally ☒ Not Functional ☐ Deteriorated ☐ Damaged ☐ Adequate ☐ Inadequate ☐

☐ 15. Other observations on the spillways/Corrective Action: _____

F. Instrumentation (refer to Glossary for description)

☐ 1. Are there any toe drains at the downstream toe or any other seepage drains on the dam? Yes ☒ No ☐

If yes, describe the condition (for example, clogged, free flowing, deteriorated, good condition) /Corrective Action: _____

clear out vegetation

☐ 2. For drains, is an animal guard installed at the outlet of each drain? Yes ☒ No ☐

If no, which drains lack animal guards? /Corrective Action: _____

☐ 3. For drains, measure the rate of flow from each drain and record below (use additional pages if necessary):

Designation/Location of Drain	Flow Rate	Flow Rate in GPM*	Turbidity of Flow (describe - clear, muddy, etc.)
J	905	0.67	clear
K	trickle	trickle	"
L	105	0	"
M	trickle	trickle	"

☐ 4. Are there any piezometers on the dam? Yes ☒ No ☐

If yes, describe the condition (for example, good condition, damaged, etc.) /Corrective Action: _____

good cond.

☐ 5. For piezometers, does each piezometer have a cap with a lock? Yes ☒ No ☐

If no, which piezometers need caps (to prevent rain water intrusion) and/or locks (to prevent tampering)? /Corrective Action: _____

☐ 6. For piezometers, are you able to take a measurement (depth to water) in each piezometer? Yes ☒ No ☐

If yes, record depth to water (in feet) in each piezometer, record on a separate page, and attach to this form.

☐ 7. Are there any other monitoring devices on the dam? Yes ☐ No ☒

If yes, describe what type and the condition (for example, monitoring wells - good condition, damaged) /Corrective Action: _____

☐ 8. Other observations on instrumentation/Corrective Action: _____

G. Photographs

At a minimum, photographs should be taken of the crest, upstream slope, downstream slope and any other notable features.

List of photographs (be sure to date stamp the photos): Attached

*GPM (gallons per minute): to convert from oz/sec multiply by 0.4688; to convert from ml/sec multiply by 0.01585