Sleepy Hollow Lake Dam
National Inventory of Dams # NY00142
NY State ID# 209-3977

Complying with Dam Safety Regulations
The Sleepy Hollow Lake Story

Association of Property Owners
of Sleepy Hollow Lake
Unit 1095
92 Randy Road
Athens, NY 12015
(518) 731-6175
Association Manager
Association of Property Owners of Sleepy Hollow Lake

Laurel Mann
lmann@sleeyhyhollowlake.org
The Community

- Private Homeowners Association Developed in the 1970’s
- Governed by the SHL Board of Directors through Protective Covenants and By-laws

Staffing
- Administrative - 5
- Maintenance - 11
- Public Safety 24/7 - 19
- Seasonal lifeguards/ID Checkers – 30
- Water Treatment Plant - 3
- Waste Water Treatment Plant - 3
The lake

- Our Reservoir
- 324 acres
- 2 ½ miles long
- 70-feet deep at deepest
- 17-miles of shoreline
- Boating, Swimming, Fishing, Waterskiing
Sleepy Hollow Lake

**Legend**
- foliage
- nature reserve
- public area

**OTHER SHL FACTS**
- 2200 Acres in a beautiful, rural setting between the Hudson River and the Catskill Mountains.
- 720 Acres with 16 miles of lake frontage.
- 24 Hour Public Safety Department.
- Underground Utilities, Community Water & Sewer.
- 2 Hours from NYC, 30 Minutes from Albany, NY.
- 30 Minutes from the Catskill Mountain Resort.
- Sleepy Hollow Lake offers some of the best large mouth bass fishing in New York State.
- The New York State Record Crappie was caught in Sleepy Hollow Lake.
- **Amenities**
  - Lodge
  - Beach
  - 2-Pools
  - 2-Tennis Courts
  - Tennis Club
  - 2-Basketball Courts
  - Several Parks

- **Infrastructure**
  - 22 Miles of Roads
  - Water Treatment Plant
  - 2-Water Towers
  - Fire Hydrants
  - Wastewater Treatment Plant (Pressurized System)
  - 3-Pump Stations
  - DAM
The Dam

- Completed in 1973
- Murderers' Creek
- Class “A” drinking water reservoir
  - §701.6 Class A fresh surface waters
  - A source of water supply for drinking
  - Recreation and fishing
- Class “C” High Hazard Dam
Sleepy Hollow Dam
Athens, NY
Dam Construction Data

- Earthen Dam with Clay Soil Core
- Embankment (Earth)
- Concrete Spillway
- Drainage System
- Regulating Outlet
- Plunge Pool
- Downstream Channels
- Monitoring Instrumentation
Spillway Components

OGEE WEIR

TRAINING WALLS

CHUTE APRON - SLAB

RETAINING ("WING") WALLS
Chimney Drain & Base Drains
Outlet Works

- Regulating outlet is a 48” diameter concrete pipe controlled by a mechanically activated sluice gate.
- Downstream Channel –
  - Spillway empties directly into original Murderer’s Creek
  - the regulating outlet into an auxillay channel that directs flow to the creek and out to the Hudson River
PIEZOMETER WELLS

- A piezometer is a small diameter observation well used to measure the hydraulic head of groundwater.
- SHL dam has 15 wells
SLEEPY HOLLOW DAM ASSESSMENT
TOWN OF ATHENS GREENE COUNTY N.Y.

APPENDIX B PIEZOMETER LOCATION MAP

DATE 10/31/07 DRAWN BY: KHR/RCL

SCALE 1" = 100'

C&A JOB# 2536.0 DRAWING: 1 OF 1
Critical Dam Data

- **Dam length:** 753 feet
- **Dam depth:** 150 at top to 350 ft at bottom
- **Year Complete:** 1973
- **River:** Murderers’ Creek
- **Reservoir:** 3.9 Billion Gallons of Water
- **Raw Water Intakes:** 5-feet and 15-feet deep
- **Filtration Plant Capacity:** 2 Million Gallons per day
- **Watershed:** 13.3 Square Miles
- **Dam Elevation:** 82.5 feet
- **Spillway Elevation:** 70 feet
- **Spillway Type:** Ogee
- **Spillway dimensions:** 80’ x 550’
New York State Inventory of Dams
Name of Dam: SLEEPY HOLLOW DAM
State ID: 209-3977
Hazard Code: C
See below for hazard code definition
Year Completed: 1972
Most Recent Inspection: 6/18/2008

Location Information:

<table>
<thead>
<tr>
<th>County</th>
<th>Section, Township, or Range</th>
<th>River or Stream</th>
<th>Latitude</th>
<th>Longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>GREENE</td>
<td>ATHENS</td>
<td>MURDERERS CREEK</td>
<td>42°16’50&quot;</td>
<td>73°48’17&quot;</td>
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</tbody>
</table>

Type:

<table>
<thead>
<tr>
<th>Type of Construction</th>
<th>Purpose</th>
<th>Owner Type</th>
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<tbody>
<tr>
<td>EARTH</td>
<td>RECREATION,WTR SUPPLY</td>
<td>PRIVATE</td>
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</table>

Technical Information:

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<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
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<tbody>
<tr>
<td>Dam Length (feet)</td>
<td>750</td>
</tr>
<tr>
<td>Dam Height (feet)</td>
<td>83</td>
</tr>
<tr>
<td>Spillway Width (feet)</td>
<td>80</td>
</tr>
<tr>
<td>Maximum Discharge (cubic feet per second)</td>
<td>14100</td>
</tr>
<tr>
<td>Maximum Storage (acre-feet)</td>
<td>13500</td>
</tr>
<tr>
<td>Normal Storage (acre-feet)</td>
<td>8400</td>
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<tr>
<td>Reservoir Surface Area (acres)</td>
<td>324</td>
</tr>
<tr>
<td>Drainage Area (square miles)</td>
<td>13.3</td>
</tr>
<tr>
<td>Basin</td>
<td>LOWER HUDSON</td>
</tr>
<tr>
<td>Date of Data Update</td>
<td>7/23/2008</td>
</tr>
</tbody>
</table>

Note: Hazard Code denotes the downstream hazard potential in the event of a dam failure.

C = High
B = Intermediate
A = Low
0 = Null; No hazard code assigned

Also Note: This data was exported from DEC’s database in October 2008. Updates to data that occurred after October 2008 are not reflected here.
New York State Inventory of Dams

- Low
- Intermediate
- High

Sleepy Hollow Dam
Dam Safety Revisions

- EAP Due August 2010 - Submitted June 2008
- Inspection and Maintenance Plan Due August 2010 – Completed January 2010
- Engineering Assessment Due August 2012 and every 10-years after
- Annual Certification by January 31 each year beginning 2010
Sleepy Hollow Lake Dam Emergency Action Plan

- The Plan
  - Inundation Map
  - Notification Flow Chart
  - Engineering Assessment
  - Inspection and Maintenance Plan

- Action Items
  - Table-Top
  - Physical Drill
  - Promulgation and Concurrence
  - Continuing Education
  - Networking
EMERGENCY ACTION PLAN

NATIONAL INVENTORY OF DAMS #NY00142

SLEEPY HOLLOW LAKE DAM

Association of Property Owners of Sleepy Hollow Lake, Inc
Unit 1095
92 Randy Road
Athens, NY 12015
(518) 731-6175
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E. **Guidance Documents for the Dam Operator**  
   1. Dam Incident Report Form  
   2. Visual Inspection Checklist & Diagram
Working with local and State EMS

- Table Top
  - November 2009
  - AAR NYSEMO REGION II “The tabletop exercise was valuable and well-organized to bring all the agencies together for numerous reasons. The time for all the necessary personnel to meet is before an actual incident occurs in order to develop a relationship based on trust and respect. There are many examples of disasters being managed more proficiently if the significant staff had worked together previously. Also, this exercise revealed what supplies, equipment and personnel are available during a disaster from different agencies.”
Physical Drill – Greene County Emergency Services and New York State Office of Emergency Management

“DamEx10”
Sleepy Hollow Lake Dam
Alert and Notification Drill
25 September 2010

AFTER ACTION REPORT/IMPROVEMENT PLAN
Participating Organizations

- Athens Fire Department
- Catskill Fire Department
- Coxsackie Fire Department
- Greene County Emergency Services
- Greene County Sheriff
- American Red Cross
- Sleepy Hollow Association
- West Athens Lime Street Fire
Promulgation and Concurrence

- A form must be submitted for all EAP’s to indicate that consultation with local emergency managers has been completed.

- The **owner** is required to be fully familiar with the entire EAP, as the **owner** is responsible for the implementation of the EAP in the event of an emergency.

- An EAP is useful only if it accurately reflects site conditions, is kept up to date, and the roles of the various participants are understood and agreed to.

- It is the responsibility of each dam **owner** to develop an EAP tailored to their dam, and to coordinate the EAP with County Emergency Managers, other emergency responders, and local officials. The dam **owner** should seek to work with county and local emergency managers to develop a planning team that is aware of the dam, conditions at the dam site, and the unique conditions that must be considered should a dam incident occur.
Engineering Assessment

- **Hydraulics and Hydrology – Spillway Capacity**
  - The dam must handle a design flow rate of \( \frac{1}{2} \) the probable maximum flood = must handle drainage runoff imposed by a hurricane event
  - Old standard – HMR-33 analysis
  - New standard – HMR 51/52

- **Stability Analysis**
  - Spillway and Ogee Weir
  - Slope Stability Analysis of Earthen Dam
Inspection & Maintenance Plan

- Quarterly Inspection by staff
  - Piezometer Readings
  - Overgrowth of Vegetation
  - Animal Burrows
- Annual Staff meetings
- Regular inspections by P.E. Dan Proper, Proper and O’Leary Engineering
  - Monitoring Points
# Sleeping Hollow Dam

## Piezometer and Flow Data Sheet

**Date:______ Weather & Temp:_________________________ Insp. Initials:______**

**Weather Conditions**

<table>
<thead>
<tr>
<th>Piez. #</th>
<th>(1) Elev. at Top of Piezometer (A)</th>
<th>(2) Elev. at Bottom of Piezometer</th>
<th>(3) Water Level in Piezometer (B)</th>
<th>Depth to Water from Top of Piezometer (B)</th>
<th>(4) Water Elevation (A) – (B)</th>
<th>Average Water Elevation</th>
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<tbody>
<tr>
<td>1A</td>
<td>80.76</td>
<td>43.39</td>
<td>37.37</td>
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<td>45.87</td>
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<td>1B</td>
<td>81.74</td>
<td>20.57</td>
<td>61.17</td>
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<td>2</td>
<td>81.53</td>
<td>35.93</td>
<td>45.60</td>
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<td>3A</td>
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<td>5A</td>
<td>54.35</td>
<td>39.58</td>
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<td>46.58</td>
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<td>11</td>
<td>46.29</td>
<td>3.07</td>
<td>43.22</td>
<td></td>
<td>11.30</td>
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</tr>
</tbody>
</table>

(1) Top of piezometers field surveyed by Crawford and Associates Engineering, P.C. on 1/8 & 10/25/07.
(2) Piezometer depth measured by Crawford and Associates Engineering, P.C. on 1/8 & 10/25/07.
(3) Inspector shall compare to the Average Water Elevation to determine extent of fluctuation.

**Relief Drain:** Outlet Works Flow

- Outlet A
- Outlet B
- Outlet C
- Outlet D
- Outlet E
- Sluice Pipe

---

H:\WORK\2638.0\Piezo_data-sheets.DOC  October 31, 2007
Continuing Education Opportunities

- NYS DEC
- FEMA
  - National Dam Safety Program Technical Seminar in Emmitsburg, MD every February
- ASDSO
  - Association of State Dam Safety Officials
  - Annual Conference
  - Regional Conferences
  - Publications
Networking

- Sharing of information – Village of Athens
- Confirming Engineering advice – NRCS
- Learn from others’ Experiences
- NYS Chapter of Dams??
Thank You!

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