PHASE I INSPECTION REPORT
NATIONAL DAM INSPECTION PROGRAM

prepared for
DEPARTMENT OF THE ARMY
Baltimore District, Corps of Engineers
Baltimore, Maryland 21203

prepared by
MICHAEL BAKER, JR., INC.
Consulting Engineers
4301 Dutch Ridge Road
Beaver, Pennsylvania 15009

June 1981

SUSQUEHANNA RIVER BASIN
MILLER'S RUN, BRADFORD COUNTY
PENNSYLVANIA

MILLER'S POND DAM
NDI No. PA 01004
PennDER No. 8-27
Dam Owner: Ernest Weaver
This report is prepared under guidance contained in the "Recommended Guidelines for Safety Inspection of Dams," for Phase I Investigations. Copies of these guidelines may be obtained from the Office of Chief of Engineers, Washington, D.C. 20314. The purpose of a Phase I Investigation is to identify expeditiously those dams which may pose hazards to human life or property. The assessment of the general condition of the dam is based upon available data and visual inspections. Detailed investigation and analyses involving topographic mapping, subsurface investigations, testing, and detailed computational evaluations are beyond the scope of a Phase I Investigation; however, the investigation is intended to identify any need for such studies.

In reviewing this report, it should be realized that the reported condition of the dam is based on observations of field conditions at the time of inspection along with data available to the inspection team. In cases where the reservoir was lowered or drained prior to inspection, such action, while improving the stability and safety of the dam, removes the normal load on the structure and may obscure certain conditions which might otherwise be detectable if inspected under the normal operating environment of the structure.

It is important to note that the condition of a dam depends on numerous and constantly changing internal and external conditions, and is evolutionary in nature. It would be incorrect to assume that the present condition of the dam will continue to represent the condition of the dam at some point in the future. Only through frequent inspections can unsafe conditions be detected and only through continued care and maintenance can these conditions be prevented or corrected.

Phase I Inspections are not intended to provide detailed hydrologic and hydraulic analyses. In accordance with the established guidelines, the spillway design flood is based on the estimated "Probable Maximum Flood" for the region (greatest reasonably possible storm runoff), or fractions thereof. The spillway design flood provides a measure of relative spillway capacity and serves as an aid in determining the need for more detailed hydrologic and hydraulic studies, considering the size of the dam, its general condition and the downstream damage potential.
ASSESSMENT OF GENERAL CONDITIONS

Miller's Pond Dam is owned by Ernest Weaver and is classified as a "Low" hazard - "Small" size dam. The dam was found to be in poor overall condition at the time of inspection.

Hydraulic/hydrologic evaluations performed in accordance with procedures established by the Baltimore District, Corps of Engineers, for Phase I Inspection Reports revealed that the spillway will pass the 100-year flood without overtopping the dam. A spillway design flood (SDF) in the range of the 50-year flood to the 100-year flood is required for Miller's Pond Dam. The 100-year flood was chosen as the SDF. Therefore, the spillway is considered "Adequate."

There are two seeps, approximately 5 g.p.m. and 1 g.p.m., and a minor boil near the downstream toe of the dam. There are depressions along the upstream crest which may indicate "piping" of the embankment materials. These areas should be monitored.

Several items of remedial work should be immediately initiated by the owner. These include:

1) Monitor the two areas of seepage at regular intervals and during periods of high reservoir levels for turbidity and/or increase in flow, which may indicate the potential for piping of embankment material. If turbidity or increased flows are noted, a qualified geotechnical engineering firm should be retained to recommend remedial measures.

2) Fill, compact, and seed the depressions on the crest of the dam.

3) Cut all trees and brush on the embankment at ground level. All trees with a trunk diameter greater than 3 inches should have their root systems removed. All resultant areas of erosion and cavities should be filled, graded, compacted, and seeded.
MILLER'S POND DAM

(4) Clear the spillway approach channel of all debris and protect with riprap.

(5) Repair the discharge apron and training walls.

(6) Fill and seed the areas of erosion behind the wingwalls.

(7) Protect the channel immediately downstream from the embankment with erosion protection.

(8) Provide means to draw down the reservoir during an emergency.

In addition, the following operational measures are recommended to be undertaken by the owner:

1) Develop a detailed emergency operation and warning plan.

2) During periods of unusually heavy rainfall, provide around-the-clock surveillance of the dam.

3) Activate the emergency operation and warning system when warning of a storm of major proportions is given by the National Weather Service.

It is further recommended that formal inspection, maintenance, and operational procedures and records be developed and implemented. These should be included in a formal maintenance and operations manual for the dam.

Submitted by:

MICHAEL BAKER, JR., INC.

John A. Dziubek, P.E.
Engineering Manager-Geotechnical

Date: 26 June 1981

Approved by:

DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS

JAMES W. PECK
Colonel, Corps of Engineers
Commander and District Engineer

Date: 734 981
MILLER'S POND DAM

Overall View of Upstream Side of Embankment and Spillway

Overall View of Downstream Side of Embankment and Spillway
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PHASE I INSPECTION REPORT
NATIONAL DAM INSPECTION PROGRAM
MILLER'S POND DAM
NDI No. PA 01004, PennDER No. 8-27

SECTION 1 - PROJECT INFORMATION

1.1 GENERAL

a. Authority - The Dam Inspection Act, Public Law 92-367, authorized the Secretary of the Army, through the Corps of Engineers, to initiate a program of inspection of dams throughout the United States.

b. Purpose of Inspection - The purpose of the inspection is to determine if the dam constitutes a hazard to human life or property.

1.2 DESCRIPTION OF PROJECT

a. Description of Dam and Appurtenances - Miller's Pond Dam is an earthfill embankment 230 feet long and 21.7 feet high. The embankment has a crest width varying from 40 feet to 51 feet, and side slopes of 1.8H:1V (Horizontal to Vertical) upstream and 1.4H:1V downstream. A township road runs along the crest of the dam.

The spillway, located near the center of the dam, is a concrete box culvert with an opening 20 feet wide and 6.3 feet high.

The dam has no outlet works for dewatering the reservoir.

b. Location - Miller's Pond Dam is on Miller Run in Ridgebury Township, Bradford County, Pennsylvania. The dam is approximately 2.08 miles south of Bentley Creek in Ridgebury Township. The coordinates of the dam are N 41° 54.9' and W 76° 43.0'. The dam can be found on the USGS 7.5 minute topographic quadrangle, Bentley Creek, Pennsylvania.

c. Size Classification - The height of the dam is 21.7 feet. Storage at the top of the dam [Elevation 1425.5 feet Mean Sea Level (ft. M.S.L.)] is 684 acre-feet. The dam is therefore in the "Small" size category.
d. **Hazard Classification** - If the dam should fail, economic damage is likely to result to the township road on the crest of the dam. Loss of life is considered unlikely; therefore, the dam is considered to be in the "Low" hazard category.

e. **Ownership** - The dam is owned by Ernest Weaver, RD #3, Columbia Crossroads, Pennsylvania 16914.

f. **Purpose of Dam** - The impoundment created by the dam is used for recreation and fishing.

g. **Design and Construction History** - The original designer and contractor for Miller's Pond Dam are unknown. Additional historical data is included in Section 2.

h. **Normal Operational Procedures** - The reservoir is typically maintained at the spillway crest, Elevation 1416.0 ft. M.S.L.

### 1.3 PERTINENT DATA

<table>
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<tr>
<th>a. Drainage Area (square miles)</th>
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<tr>
<td>Spillway Capacity (El. 1422.3 ft. M.S.L.(^1))</td>
<td>3655.0</td>
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<tr>
<td>c. Elevation* (feet above Mean Sea Level [ft. M.S.L.])</td>
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<td>Design Top of Dam</td>
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<tr>
<td>Minimum Top of Dam</td>
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<td>Streambed at Toe of Dam</td>
<td>1403.8</td>
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<tr>
<td>Maximum Tailwater of Record</td>
<td>Unknown</td>
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<td>d. Reservoir (feet)</td>
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</tr>
<tr>
<td>Length of Maximum Pool (El. 1425.5 ft. M.S.L.)</td>
<td>4100.0</td>
</tr>
<tr>
<td>Length of Normal Pool (El. 1416.0 ft. M.S.L.)</td>
<td>3050.0</td>
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</table>

*All elevations are referenced to the spillway crest, Elevation 1416.0 feet M.S.L., as estimated from the USGS 7.5 minute topographic quadrangle, Bentley Creek, Pennsylvania.
\(^1\)Top of culvert opening.
e. **Storage (acre-feet)**  
   Top of Dam (El. 1425.5 ft. M.S.L.) - 684.0  
   Normal Pool (El. 1416.0 ft. M.S.L.) - 230.0

f. **Reservoir Surface (acres)**  
   Top of Dam (El. 1425.5 ft. M.S.L.) - 51.0  
   Normal Pool (El. 1416.0 ft. M.S.L.) - 35.8

g. **Dam**  
   Type - Earthfill  
   Total Length Including Spillway (feet) - 230.0  
   Height (feet) - Design Field - 21.7  
   Top Width (feet) - 40.0-51.0  
   Side Slopes - Upstream - 1.8H:1V  
   - Downstream - 1.4H:1V  
   Zoning - Unknown  
   Impervious Core - Unknown  
   Cutoff - Unknown  
   Drains - None

h. **Diversion and Regulating Tunnel** - None

i. **Spillway**  
   Type - Concrete box culvert  
   Location - Center of the dam  
   Length of Crest Perpendicular to Flow (feet) - 20.0  
   Crest Elevation (ft. M.S.L) - 1416.0  
   Gates - None  
   Downstream Channel - Steep and narrow

j. **Outlet Works** - None
SECTION 2 - ENGINEERING DATA

2.1 DESIGN

Information reviewed for preparation of this report consisted of the Pennsylvania Department of Environmental Resources' (PennDER) File No. 8-27.

1) Inspection report from the Water Supply Commission of Pennsylvania, indicating a stone fill dam 30 feet long and 3 feet high (dated 9 September 1919).

2) Plans of bridge and dam by Charles F. May (dated 3 February 1935).

3) Application to the Water and Power Resources Board, from Charles F. May, to raise the level of the pond for recreational fishing (dated 8 February 1935).

4) Memorandum stating that the dam is 15 feet high, and Mr. May, the owner, should secure the services of an engineer to prepare plans on raising the water level 5-8 feet (dated 16 October 1935).

5) Complaint to the Department of Forests and Waters, from Levi R. Colwell, Sr., Wellsburg, New York, that the pond has been drained and washed out the bridge for the township road along the crest of the dam (dated 18 February 1937).

6) Various correspondence between the Highway Department, Department of Forests and Waters, and the Ridgebury Township Supervisor concerning rebuilding the bridge over the spillway for the township road. No final agreement was ever stated. (Dated 17 March 1952 through 30 September 1952).

7) The latest inspection report, dated 17 September 1965, filed by PennDER, Division of Dams and Encroachments. Brush growing on the embankment with the general condition being good.

8) Memorandum by a PennDER representative, dated 14 September 1972, stating the dam had been rebuilt ten years previously, and that it was in good condition. Photos included showed
the spillway discharge channel intact with minor erosion at the downstream end.

2.2 CONSTRUCTION

The original designer and contractor are unknown. The dates and plans for subsequent modifications to this structure are not available, with the exception of the plans dated 3 February 1935.

2.3 OPERATION

No formal records are available for operation of the dam and reservoir. The spillway is uncontrolled, and the reservoir is typically at the spillway crest level.

2.4 EVALUATION

a. Availability - The information reviewed is readily available from PennDER File No. 8-27.

b. Adequacy - The information available, combined with the visual inspection measurements and observations, is adequate for a Phase I Inspection of this dam.

c. Validity - There is no reason at the present time to doubt the validity of the available engineering data.
SECTION 3 - VISUAL INSPECTION

3.1 FINDINGS

a. General - The inspection was performed on 31 March 1981. The weather was cloudy with temperatures in the low 50's. The dam and appurtenant structures were found to be in poor overall condition at the time of inspection. Noteworthy deficiencies observed during the visual inspection are described in the following paragraphs. The complete visual inspection check list, field sketch, top of dam profile, and typical cross section are presented in Appendix A.

b. Dam - Two seeps were observed at the downstream toe of the dam, and one boil was observed approximately 20 feet beyond the toe of the dam (see Field Sketch in Appendix A). A depression 3 feet in diameter and 2 feet deep and a 6-inch diameter depression were observed on the upstream crest. Trees and brush are growing on the upstream and downstream slopes of the embankment.

c. Appurtenant Structures - The approach channel is clogged with rock fragments, and light vegetation. The discharge apron has collapsed, and the remaining training wall has been undermined by erosion. The joints in the side of the culvert are open. There is erosion behind the wingwalls on the upstream and downstream ends of the box culvert.

d. Reservoir Area - The reservoir slopes are steep on the right side and gently sloping on the left side. No signs of instability were observed. Sedimentation is not believed to be a problem.

e. Downstream Channel - The channel directly below the dam is severely eroded. The downstream channel is steep and passes through a narrow valley. A road passes along the crest of the dam.
SECTION 4 - OPERATIONAL PROCEDURES

4.1 PROCEDURES
There are no formal procedures for operating the reservoir or evacuating the downstream area in case of an impending emergency. It is recommended that formal emergency procedures be adopted, prominently displayed, and furnished to all operating personnel.

4.2 MAINTENANCE OF DAM
There are no formal records of maintenance or formal procedures for evaluating the necessity of maintenance for the structure. It is recommended that formal inspection procedures be developed.

4.3 MAINTENANCE OF OPERATING FACILITIES
Maintenance is unscheduled and is considered to be inadequate. It is recommended that a formal operation and preventive maintenance schedule be developed and implemented.

4.4 DESCRIPTION OF ANY WARNING SYSTEM
There is no warning system in the event of dam failure. It is recommended that an emergency warning system be developed.

4.5 EVALUATION OF OPERATIONAL ADEQUACY
The current operation and maintenance are inadequate. It is recommended that a formal maintenance and operations manual be prepared for the dam.
5.1 EVALUATION OF FEATURES

a. **Design Data** - No hydrologic or hydraulic design calculations are available for Miller's Pond Dam.

b. **Experience Data** - No information concerning the effects of significant floods on the dam is available.

c. **Visual Observations** - No problems, with the exception of the discharge apron, were observed during the visual inspection which would indicate that the dam and appurtenant facilities could not perform satisfactorily during a flood event. The two upstream dams are not considered to have a significant effect on Miller's Pond Dam.

d. **Overtopping Potential** - Miller's Pond Dam is a "Small" size - "Low" hazard dam requiring evaluation for a Spillway Design Flood (SDF) in the range of the 50-year flood to the 100-year flood. The 100-year flood was chosen as the SDF.

Using material from "The Hydrologic Study - Tropical Storm Agnes" prepared by the Corps of Engineers in New York City, the peak inflow to the impoundment for the 100-year flood was calculated to be 2750 c.f.s. The peak inflow to the impoundment for the 100-year flood was also calculated to be 1167 c.f.s. using material from "Water Resources Bulletin, Bulletin No. 13, Floods in Pennsylvania", prepared by the Department of Environmental Resources, Commonwealth of Pennsylvania. Averaging these two methods produced a peak inflow of 1910 c.f.s., which was used in this analysis. The spillway can safely pass 3655 c.f.s. without overtopping the dam. Because the peak inflow to the impoundment is less than the spillway capacity, the spillway of the dam is capable of passing the 100-year flood without overtopping the dam.

e. **Spillway Adequacy** - As outlined in the above analysis, the spillway will pass the required SDF; therefore, the spillway is considered "adequate."
SECTION 6 - STRUCTURAL STABILITY

6.1 EVALUATION OF STRUCTURAL STABILITY

a. Visual Observations - The spillway discharge apron and training walls have been undermined and destroyed. This structure should be replaced. The seepage and depressions on the upstream slope indicate that "piping" of the embankment materials may be occurring. However, the depressions on the upstream slope may be from "piping" or from the settlement of voids from random dumping of the upstream slope fill from the crest of the dam. It is recommended that the seepage be monitored.

b. Design and Construction Data - Calculations of slope and structural stability are unavailable for review. The slopes have had a history of satisfactory performance with only minor sloughing of surficial materials. The dam cross section indicates a downstream slope of 1.43H:1V at the steepest point of the downstream slope. Other sections of the embankment visually appear to be flatter. Generally, the history of satisfactory slope performance indicates that the slopes have a factor of safety against sliding greater than one, and that further assessments of stability are not required as a result of the Phase I Inspection program.

c. Operating Records - There are no operational functions of any components of this dam. The current maintenance procedures are considered inadequate.

d. Post Construction Changes - Raising of the height and section of the dam has apparently been performed without the benefit of a PennDER permit or engineering input. Other changes performed do not appear to adversely affect the structural stability of the dam.

e. Seismic Stability - The dam is located in seismic Zone 1 of the "Seismic Zone Map of the Contiguous United States," Figure 1, Page D-30, "Recommended Guidelines for Safety Inspection of Dams." This is a zone of minor seismic activity. Therefore, further consideration of the seismic stability is unwarranted.
7.1 DAM ASSESSMENT

a. Safety - Miller's Pond Dam was found to be in poor overall condition at the time of inspection. Miller's Pond Dam is a "Low" hazard - "Small" size dam requiring a spillway capacity in the range of the 50-year flood to the 100-year flood. The 100-year flood was chosen as the SDF. As presented in Section 5, the spillway and reservoir are capable of passing the 100-year flood without overtopping the dam. Therefore, the spillway is considered "adequate."

Two seeps, approximately 5 g.p.m. and 1 g.p.m., and a boil are located near the downstream toe of the dam. These seepage areas should be monitored.

b. Adequacy of Information - The information available and the observations and measurements made during the field inspection are considered sufficient for the Phase I Inspection Report.

c. Urgency - The owner should initiate the remedial work discussed in paragraph 7.2 as soon as possible.

d. Necessity for Additional Data/Evaluation - No additional evaluation is necessary.

7.2 RECOMMENDATIONS/REMEDIAL MEASURES

The inspection revealed certain items of remedial work which should be performed by the owner without delay. These include:

1) Monitor the two areas of seepage at regular intervals and during periods of high reservoir levels for turbidity and/or increase in flow, which may indicate potential for the piping of embankment material. If turbidity or increased flows are noted, a qualified geotechnical engineering firm should be retained to recommend remedial measures.

2) Fill, compact, and seed the depressions on the crest of the dam.

3) Cut all trees and brush on the embankment at ground level. All trees with a trunk diameter greater than 3 inches should have their root
systems removed. All resultant areas of erosion and cavities should be filled, graded, compacted, and seeded.

4) Clear the spillway approach channel of all debris and provide with erosion protection.

5) Repair the discharge apron and training walls.

6) Fill and seed the areas of erosion behind the wingwalls.

7) Protect the channel immediately downstream from the embankment with erosion protection.

8) Provide means to draw down the reservoir during an emergency.

In addition, the following operational measures are recommended to be undertaken by the owner:

1) Develop a detailed emergency operation and warning plan.

2) During periods of unusually heavy rainfall, provide around-the-clock surveillance of the dam.

3) Activate the emergency operation and warning system when warning of a storm of major proportions is given by the National Weather Service.

It is further recommended that formal inspection, maintenance, and operational procedures and records be developed and implemented. These should be included in a formal maintenance and operations manual for the dam.
APPENDIX A

VISUAL INSPECTION CHECK LIST, FIELD SKETCH, TOP OF DAM PROFILE, AND TYPICAL CROSS-SECTION
Check List
Visual Inspection
Phase 1

Name of Dam Miller's Pond  County Bradford  State Pennsylvania  Coordinates Lat. N 41° 54.9'  
NDI No. PA 01004  
PennDER No. 8-27  

Date of Inspection 31 March 1981  Weather Cloudy  Temperature 50°F  

Pool Elevation at Time of Inspection 1416.1' M.S.L.  Tailwater at Time of Inspection 1403.7' M.S.L.  

*All elevations are referenced to the spillway crest, elevation 1416.0 ft. M.S.L., as estimated from the USGS 7.5' topographic quadrangle, Bentley Creek, PA.  

Inspection Personnel: 
Michael Baker, Jr., Inc.:  
James G. Ulinski  
Jeff L. Sawyer  
Gary W. Todd  

Owner's Representatives:  

Gary W. Todd  Recorder
CONCRETE/MASONRY DAMS  N/A

Name of Dam: MILLER'S POND DAM
NDI No. PA 01004

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<td>LEAKAGE</td>
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| STRUCTURE TO          |              |                            |
| ABUTMENT/EMBANKMENT   |              |                            |
| JUNCTIONS             |              |                            |

| DRAINS                |              |                            |

| WATER PASSAGES        |              |                            |

<p>| FOUNDATION            |              |                            |</p>
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**VISUAL EXAMINATION OF**

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| **UNUSUAL MOVEMENT OR**
| **CRACKING AT OR BEYOND**
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| **SLLOUGHING OR EROSION OF**
| **EMBANKMENT AND ABUTMENT**
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<th><strong>REMARKS OR RECOMMENDATIONS</strong></th>
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<tbody>
<tr>
<td></td>
<td>There is an eroded area behind and below the left side of the culvert wing wall on the upstream side of the embankment. There is an eroded area behind the right downstream culvert wing wall.</td>
<td>Fill in erosion gullies and reseed.</td>
</tr>
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</table>
**E'Bankment**

**Name of Dam**: MILLER'S POND DAM  
**NDI No.**: PA 01004

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<th>REMARKS OR RECOMMENDATIONS</th>
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<tbody>
<tr>
<td>VERTICAL AND HORIZONTAL ALIGNMENT OF THE CREST</td>
<td>There is good vertical and horizontal alignment.</td>
<td></td>
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</table>

**RIPRAP FAILURES**  
No problems observed.

**VEGETATION**  
Trees and brush are growing on the upstream and downstream sides of the embankment.  
Cut the trees and brush on the embankment and for ten ft. below the toe of the dam.
# EMBANKMENT

**Name of Dam**: MILLER'S POND DAM  
**NDI No.**: PA 01004

<table>
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<tbody>
<tr>
<td>JUNCTION OF EMBANKMENT AND ABUTMENT, SPILLWAY AND DAM</td>
<td>A gully has been washed at the upstream junction of the abutment on the right side.</td>
<td>Provide with erosion protection.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ANY NOTICEABLE SEEPAGE</th>
<th>OBSERVATIONS</th>
<th>REMARKS OR RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two areas of seepage were observed at the downstream toe near the right abutment. One seep approximately 1 g.p.m., one seep approximately 5 g.p.m. There is a boil 20 ft. below the toe of the embankment below the larger seep.</td>
<td>Monitor these areas.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STAFF GAGE AND RECORDER</th>
<th>OBSERVATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>None observed.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DRAINS</th>
<th>OBSERVATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>None observed for the embankment.</td>
<td></td>
</tr>
</tbody>
</table>
Name of Dam: MILLER'S POND DAM
NDI No. PA 01004

<table>
<thead>
<tr>
<th>VISUAL EXAMINATION OF</th>
<th>OBSERVATIONS</th>
<th>REMARKS OR RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRACKING AND SPALLING OF CONCRETE SURFACES IN OUTLET CONDUIT</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

INTAKE STRUCTURE

OUTLET STRUCTURE

OUTLET CHANNEL

EMERGENCY GATE
## UNGATED SPILLWAY

<table>
<thead>
<tr>
<th>Name of Dam:</th>
<th>MILLER'S POND DAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>NDI No. PA</td>
<td>01004</td>
</tr>
</tbody>
</table>

### VISUAL EXAMINATION OF CONCRETE WEIR
- **Observations:** The concrete box culvert appeared in good condition.

### APPROACH CHANNEL
- **Observations:** It is clogged with rock fragments and light vegetation.
- **Remarks:** Clear obstructions from the channel.

### DISCHARGE CHANNEL
- **Observations:** The discharge apron is destroyed. There are voids under right remaining downstream training wall. The left downstream abutment soils are capable of liquifying when fully (super) saturated.
- **Remarks:** There is evidence that clay pipe underdrains under apron. The concrete slab at culvert has dropped 2" near end and may have started to be undermined. There is major erosion in the downstream discharge channel.

### BRIDGE AND PIERS
- **Observations:** There is a joint open on the sides of the culvert. There are two spots on soffit where minor seepage is coming through.
<table>
<thead>
<tr>
<th>VISUAL EXAMINATION OF</th>
<th>OBSERVATIONS</th>
<th>REMARKS OR RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONCRETE SILL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>APPROACH CHANNEL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DISCHARGE CHANNEL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BRIDGE AND PIERS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GATES AND OPERATION EQUIPMENT</td>
<td></td>
<td></td>
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</tbody>
</table>
## Instrumentation

**Name of Dam:** MILLER'S POND DAM  
**NDI No.:** PA 01004

<table>
<thead>
<tr>
<th>Visual Examination</th>
<th>Observations</th>
<th>Remarks or Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Monumentation/Surveys</strong></td>
<td>None observed.</td>
<td></td>
</tr>
<tr>
<td><strong>Observation Wells</strong></td>
<td>None observed.</td>
<td></td>
</tr>
<tr>
<td><strong>Weirs</strong></td>
<td>None observed.</td>
<td></td>
</tr>
<tr>
<td><strong>Piezometers</strong></td>
<td>None observed.</td>
<td></td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td>None.</td>
<td></td>
</tr>
<tr>
<td>VISUAL EXAMINATION OF</td>
<td>OBSERVATIONS</td>
<td>REMARKS OR RECOMMENDATIONS</td>
</tr>
<tr>
<td>-----------------------</td>
<td>--------------</td>
<td>----------------------------</td>
</tr>
<tr>
<td>SLOPES</td>
<td>The reservoir slopes on the right side are steep (30°-45°). The slopes on the left side are gentle (5°-10°). No signs of instability were observed.</td>
<td></td>
</tr>
<tr>
<td>SEDIMENTATION</td>
<td>Sedimentation is not believed to be a problem.</td>
<td></td>
</tr>
</tbody>
</table>
**MILLER'S POND DAM**

**NDI No. PA 01004**

<table>
<thead>
<tr>
<th>VISUAL EXAMINATION OF</th>
<th>OBSERVATIONS</th>
<th>REMARKS OR RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONDITION (OBSTRUCTIONS, DEBRIS, ETC.)</td>
<td>No debris was present in the channel. The channel directly below the embankment is severely eroded.</td>
<td></td>
</tr>
<tr>
<td>SLOPES</td>
<td>The downstream channel has steep slopes through a narrow channel.</td>
<td></td>
</tr>
<tr>
<td>APPROXIMATE NO. OF HOMES AND POPULATION</td>
<td>7800 ft. below the dam are several homes ranging from 5 ft. to 10 ft. above the stream bed.</td>
<td></td>
</tr>
</tbody>
</table>
MILLER'S POND DAM

TOP OF DAM PROFILE
TYPICAL CROSS-SECTION

DATE OF INSPECTION: 31 March 1981

Top of Dam Profile (looking downstream)

Length of Dam 230 Feet

Minimum Top of Dam
Elev. 1425.5 Ft.

Elev. 1422.3 Ft.

Spillway Crest
Elev. 1416.0 Ft.

HORIZONTAL DISTANCE (FEET)

Typical Cross Section @ Station 1+75

Crest Width 51 Feet

1.8 H:1V

1.4 H:1V

Top of Dam
Elev. 1403.8 Ft.
APPENDIX B

ENGINEERING DATA CHECK LIST
### CHECK LIST
**ENGINEERING DATA**

**Name of Dam:** Miller's Pond Dam  
**NDI No.:** PA 01004

<table>
<thead>
<tr>
<th>ITEM</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLAN OF DAM</td>
<td>See Appendix E, Plate 3 of this report.</td>
</tr>
<tr>
<td>REGIONAL VICINITY MAP</td>
<td>A USGS 7.5 minute topographic quadrangle, Bentley Creek, Pennsylvania, was used to prepare the vicinity map which is enclosed in this report as the Location Plan (Plate 1) Appendix E.</td>
</tr>
<tr>
<td>CONSTRUCTION HISTORY</td>
<td>The designer and contractor are unknown.</td>
</tr>
<tr>
<td>TYPICAL SECTIONS OF DAM</td>
<td>See Appendix E, Plate 4 of this report.</td>
</tr>
<tr>
<td>HYDROLOGIC/HYDRAULIC DATA</td>
<td>No information available.</td>
</tr>
<tr>
<td>OUTLETS - PLAN</td>
<td>None.</td>
</tr>
<tr>
<td>- DETAILS</td>
<td>None.</td>
</tr>
<tr>
<td>- CONSTRAINTS</td>
<td>None.</td>
</tr>
<tr>
<td>- DISCHARGE RATINGS</td>
<td>None.</td>
</tr>
<tr>
<td>RAINFALL/RESERVOIR RECORDS</td>
<td>No records are maintained.</td>
</tr>
</tbody>
</table>
**Name of Dam:** MILLER'S POND DAM  
**NDI No.** PA 01004

<table>
<thead>
<tr>
<th>ITEM</th>
<th>REMARKS</th>
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</thead>
<tbody>
<tr>
<td>DESIGN REPORTS</td>
<td>None available.</td>
</tr>
<tr>
<td>GEOLOGY REPORTS</td>
<td>No geology reports are available for the dam. See Appendix F for the regional geology.</td>
</tr>
<tr>
<td>DESIGN COMPUTATIONS</td>
<td>None available.</td>
</tr>
<tr>
<td>HYDROLOGY &amp; HYDRAULICS</td>
<td>None available.</td>
</tr>
<tr>
<td>DAM STABILITY</td>
<td>None available.</td>
</tr>
<tr>
<td>SEEPAGE STUDIES</td>
<td>None available.</td>
</tr>
<tr>
<td>MATERIALS INVESTIGATIONS</td>
<td>None available.</td>
</tr>
<tr>
<td>BORING RECORDS</td>
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</tr>
<tr>
<td>LABORATORY FIELD</td>
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</tr>
<tr>
<td>POST-CONSTRUCTION SURVEYS OF DAM</td>
<td>None available.</td>
</tr>
<tr>
<td>BORROW SOURCES</td>
<td>No information available.</td>
</tr>
<tr>
<td>ITEM</td>
<td>REMARKS</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>MONITORING SYSTEMS</td>
<td>None.</td>
</tr>
<tr>
<td>MODIFICATIONS</td>
<td>The height of the dam has been raised several times, and the spillway has been modified. However, there are no records of dates when these changes were made.</td>
</tr>
<tr>
<td>HIGH POOL RECORDS</td>
<td>No information available.</td>
</tr>
<tr>
<td>POST-CONSTRUCTION ENGINEERING STUDIES AND REPORTS</td>
<td>The latest inspection of 14 September 1972 indicated that the dam was in good condition with minor erosion at the downstream end of the spillway discharge channel.</td>
</tr>
<tr>
<td>PRIOR ACCIDENTS OR FAILURE OF DAM</td>
<td>None reported in the available information.</td>
</tr>
<tr>
<td>DESCRIPTION REPORTS</td>
<td></td>
</tr>
<tr>
<td>MAINTENANCE OPERATION RECORDS</td>
<td>No formal maintenance records are maintained.</td>
</tr>
<tr>
<td>ITEM</td>
<td>SPILLWAY PLAN, SECTIONS, and DETAILS</td>
</tr>
<tr>
<td>------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>NAME</td>
<td>MILLER'S POND DAM</td>
</tr>
<tr>
<td>NDI NO.</td>
<td>PA 01004</td>
</tr>
<tr>
<td>REMARKS</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CHECK LIST
HYDROLOGIC AND HYDRAULIC DATA
ENGINEERING DATA

DRAINAGE AREA CHARACTERISTICS: 2.66 sq. mi. (Primarily forested)

ELEVATION TOP NORMAL POOL (STORAGE CAPACITY): 1416.0 Ft. M.S.L.
(230 Ac.-Ft.)

ELEVATION TOP FLOOD CONTROL POOL (STORAGE CAPACITY): 1425.5 Ft. M.S.L.
(684 Ac.-Ft.)

ELEVATION MAXIMUM DESIGN POOL: Unknown

ELEVATION TOP DAM: 1425.5 Ft. M.S.L. (Minimum top of dam)

SPILLWAY:

a. Crest Elevation 1416.0 Ft. M.S.L.
b. Type Concrete Box Culvert
c. Width of Crest Parallel to Flow 39.8 Ft.
d. Length of Crest Perpendicular to Flow 20 Ft.
e. Location Spillover Center of embankment
f. Number and Type of Gates None

OUTLET WORKS: None

a. Type ___________________________
b. Location _______________________
c. Entrance Inverts _______________________
d. Exit Inverts _______________________
e. Emergency Drawdown Facilities _______________________

HYDROMETEOROLOGICAL GAGES: None

a. Type ___________________________
b. Location _______________________
c. Records _______________________

MAXIMUM NON-DAMAGING DISCHARGE Unknown
APPENDIX C

PHOTOGRAPH LOCATION PLAN AND PHOTOGRAPHS
DETAILED PHOTOGRAPH DESCRIPTIONS

Overall View of Dam

Top Photo - Overall View of Upstream Side of Embankment and Spillway
(OV-T)

Bottom Photo - Overall View of Downstream Side of Embankment and Spillway
(OV-B)

Photograph Location Plan

Photo 1 - View of Upstream Slope From Left Abutment

Photo 2 - View of Downstream Slope From Left Abutment

Photo 3 - View of Spillway Entrance From Upstream

Photo 4 - View of Low Flow Channel Into Spillway

Photo 5 - View of Downstream Discharge Apron of Spillway

Photo 6 - View of Downstream Channel

Photo 7 - View of Spillway (Culvert) - Note Approximately Two Inch Vertical Separation at Joint

Photo 8 - View of One of the Depressions (Vertical Holes) Along Upstream Crest of the Embankment

Note: Photographs were taken on 31 March 1981.
MILLER'S POND DAM

PHOTO 1. View of Upstream Slope from Left Abutment

PHOTO 2. View of Downstream Slope from Left Abutment
MILLER'S POND DAM

PHOTO 3. View of Spillway Entrance from Upstream

PHOTO 4. View of Low Flow Channel into Spillway
MILLER'S POND DAM

PHOTO 5. View of Downstream Discharge Apron of Spillway

PHOTO 6. View of Downstream Channel
PHOTO 7. View of Spillway (Culvert)
Note: Approximately Two Inch Vertical Separation at Joint

PHOTO 8. View of One of the Depressions (Vertical Holes)
Along Upstream Crest at the Embankment
APPENDIX D

HYDROLOGIC AND HYDRAULIC COMPUTATIONS
<table>
<thead>
<tr>
<th>Subject</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrology and Hydraulic Data Base</td>
<td>1</td>
</tr>
<tr>
<td>Hydraulic Data</td>
<td>2</td>
</tr>
<tr>
<td>Drainage Area and Centroid Map</td>
<td>3</td>
</tr>
<tr>
<td>Top of Dam Profile and Cross Section</td>
<td>4</td>
</tr>
<tr>
<td>Spillway Discharge Rating</td>
<td>5</td>
</tr>
<tr>
<td>100-Year Discharge Calculation</td>
<td>6</td>
</tr>
<tr>
<td>Reservoir Storage Capacity</td>
<td>8</td>
</tr>
</tbody>
</table>
HYDROLOGIC AND HYDRAULIC COMPUTATIONS

The hydrologic determinations presented in this Phase I Inspection Report are based on the use of a Snyder's unit hydrograph developed by the U.S. Army Corps of Engineers. Due to the limited number of gaging stations available in this hydrologic region and the wide variations of watershed slopes, the Snyder's coefficients may yield results of limited accuracy for this watershed. As directed however, a further refinement of these coefficients is beyond the scope of this Phase I Investigation.

In addition, the conclusions presented pertain to present conditions, and the effect of future development on the hydrology has not been considered.
HYDROLOGY AND HYDRAULIC ANALYSIS
DATA BASE

NAME OF DAM: MILLER'S POND DAM

PROBABLE MAXIMUM PRECIPITATION (PMP) = 22.0 INCHES/24 HOURS

<table>
<thead>
<tr>
<th>STATION</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<tbody>
<tr>
<td>Station Description</td>
<td>MILLER'S POND DAM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drainage Area (square miles)</td>
<td>2.66</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cumulative Drainage Area (square miles)</td>
<td>2.66</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjustment of PMP for Drainage Area (Z)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 Hours</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>24 Hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>48 Hours</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Snyder Hydrograph Parameters

- Zone (1) = 11
- C_p/C_t (2) = 0.62/1.5
- L (miles) (3) = 3.50
- L_{ca} (miles) (3) = 1.48
- t_p = C_{t} (L/L_{ca})^{0.3} (hours) = 2.46

Spillway Data

- Crest Length (ft) = 20
- Freeboard (ft) = 9.5
- Discharge Coefficient Exponent
- RATING CURVE
- DEVELOPED ON SHEET 5

(1) Hydrological zone defined by Corps of Engineers, Baltimore District, for determining Snyder's Coefficients (C_p and C_t).

(2) Snyder's Coefficients.

(3) L = Length of longest water course from outlet to basin divide.

L_{ca} = Length of water course from outlet to point opposite the centroid of drainage area.
DRAINAGE AREA

GILLET QUAD. \(54.85 \times \frac{55.81}{3} = 18.60 \text{ in}^2 = 1,708.0 \text{ Acres} = 2.66 \text{ mi}^2\)

BENTLEY CREEK QUAD. \(0.96 \times \frac{55.81}{3} = 18.60 \text{ in}^2 = 1,708.0 \text{ Acres} = 2.66 \text{ mi}^2\)

SURFACE AREAS

LAKE SURFACE @ El. \(1400 - 1.16\frac{2}{3} = 0.39 \text{ in}^2 = 35.8 \text{ Acres} = 0.06 \text{ mi}^2\)

El. \(1420 - 1.60\frac{2}{3} = 0.53 \text{ in}^2 = 48.7 \text{ Acres} = 0.08 \text{ mi}^2\)

El. \(1440 - 2.44\frac{2}{3} = 0.81 \text{ in}^2 = 74.4 \text{ Acres} = 0.12 \text{ mi}^2\)

WATERSHED LENGTHS

\(L = 18,500 \text{ ft.} = 3.50 \text{ mi.}\)

\(L_c = 7,300 \text{ ft.} = 1.48 \text{ mi.}\)
MILLER POND DAM
DRAINAGE AREA AND CENTROID MAP
Subject: Millers Pond Dam
Top of Dam Profile and
Typical Cross Section

Composed by GWT Checked by Date 3/31/81

Top of Dam Profile (Looking Downstream)

Length of Dam 230 Feet

Minimum Top of Dam
Elev. 1425.5 ft.
Elev. 1422.3 ft.

Spillway Crest
Elev. 1416.0 ft.

Elevation (feet N.S.)

1430
1420
1410
1400

0 50 100 150 200 250

Horizontal Distance (feet)

Typical Cross Section @ Station 1+75

Crest width 51 feet

1.8H:1V

1.4H:1V

Elev. 1403.8 ft.

Elevation (feet N.S.)

1420
1410
1400

0 20 40 60 80 100 120

Horizontal Distance (feet)
**Spillway Profile**

- **Crest**
- **Culvert Opening** 20 ft x 6.3 ft
- **Stream Elev. 1404.3 ft**

**Spillway Discharge Rating**

Using Manning Equation for flow

\[ V = \frac{1.49}{n} \sqrt{R} \]

*\( n = 0.016 \) Manning Roughness Coefficient from Beutner + King pg. 7-22*

- **Cross-sectional Area** = \( A \)
- **Wetted Perimeter** = \( P \)
- \( R \) = Hydraulic Radius
- \( S \) = Slope = 0.016 ft/ft

<table>
<thead>
<tr>
<th>Water Surface Elev. (ft)</th>
<th>Depth (ft)</th>
<th>Area (ft²)</th>
<th>P (ft)</th>
<th>R</th>
<th>( \frac{V}{R^{1/2}} )</th>
<th>( Q ) (cfs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.160</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>14.170</td>
<td>1.0</td>
<td>20.0</td>
<td>22.0</td>
<td>0.91</td>
<td>11.06</td>
<td>221.3</td>
</tr>
<tr>
<td>14.180</td>
<td>2.0</td>
<td>40.0</td>
<td>24.0</td>
<td>1.67</td>
<td>16.58</td>
<td>663.0</td>
</tr>
<tr>
<td>14.190</td>
<td>3.0</td>
<td>60.0</td>
<td>26.0</td>
<td>2.31</td>
<td>20.57</td>
<td>1,254.1</td>
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<td>14.200</td>
<td>4.0</td>
<td>80.0</td>
<td>28.0</td>
<td>2.86</td>
<td>23.72</td>
<td>1,097.4</td>
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<tr>
<td>14.210</td>
<td>5.0</td>
<td>100.0</td>
<td>30.0</td>
<td>3.33</td>
<td>26.25</td>
<td>2,624.8</td>
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<tr>
<td>14.220</td>
<td>6.0</td>
<td>120.0</td>
<td>32.0</td>
<td>3.75</td>
<td>28.41</td>
<td>3,409.0</td>
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<tr>
<td>14.22.3</td>
<td>6.3</td>
<td>126.0</td>
<td>32.6</td>
<td>3.87</td>
<td>29.01</td>
<td>3,655.4</td>
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</tbody>
</table>
THE INFLOW TO THE IMPOUNDMENT FOR THE 100-YEAR FLOOD was calculated using material from "THE HYDROLOGIC STUDY - TROPICAL STORM AGNES" PREPARED BY THE SPECIAL STUDIES BRANCH, PLANNING DIVISION, NORTH ATLANTIC DIVISION, CORPS OF ENGINEERS, IN NEW YORK CITY.

DRAINAGE AREA = 2.66 SQ. MI.

1. COMPUTE THE MEAN LOGARITHM
   \[ \log (Q_m) = C_m + 0.75 \log A \]
   \[ \log (Q_m) = \text{MEAN LOGARITHM OF ANNUAL FLOOD PEAKS} \]
   \[ A = \text{DRAINAGE AREA, SQ. MI.} = 2.66 \]
   \[ C_m = \text{MAP COEFFICIENTS FOR MEAN LOG OF ANNUAL PEAKS FROM FIG. 21} = 2.2 \]
   \[ \log (Q_m) = 2.2 + 0.75 (\log 2.66) \]
   \[ = 2.518 \]

2. COMPUTE STANDARD DEVIATION
   \[ s = C_s - 0.05 (\log A) \]
   \[ s = \text{STANDARD DEVIATION OF THE LOGARITHMS} \]
   \[ C_s = \text{MAP COEFFICIENT FOR STANDARD DEVIATION FROM FIG. 22} = 0.38 \]
   \[ A = \text{DRAINAGE AREA, SQ. MI.} = 2.66 \]
   \[ s = 0.38 - 0.05 (\log 2.66) \]
   \[ = 0.358 \]

3. SELECT SKEW COEFFICIENT FROM FIG. 23 = 0.28

4. \[ \log (Q_{100}) = \log (Q_m) + K(p, 3) S \]
   \[ K(p, 3) = \text{STANDARD DEVIATE FOR A GIVEN EXCEEDENCE FREQUENCY PERCENTAGE (P) AND SKEW COEFFICIENT (S) FROM EXHIBIT 39 OF BEARD'S "STATISTICAL METHODS IN HYDROLOGY"} \]
   \[ \log (Q_{100}) = 2.518 + 2.53 (0.358) \]
   \[ Q_{100} = 2653 \text{ CFS} \]
THE INFLOW TO THE IMPOUNDMENT FOR THE 100-YEAR FLOOD WAS CALCULATED USING MATERIAL FROM "WATER RESOURCES BULLETIN, BULLETIN NO. 13, FLOOFS IN PENNSYLVANIA", PREPARED BY THE DEPARTMENT OF ENVIRONMENTAL RESOURCES, COMMONWEALTH OF PENNSYLVANIA.

DRAINAGE BASIN FROM PLATE 2 - MODEL 2
REGRESSION EQUATION FROM TABLE 2

\[ Q = C A^x \]

\[ T = 100 \text{ years} \]
\[ C = 564 \]
\[ A = \text{DRAINAGE AREA, 2.66 sq. mi.} \]
\[ x = 0.744 \]

\[ Q_{100} = 564 (2.66)^{0.744} \]
\[ Q_{100} = 1167 \text{ C.F.S.} \]

ELEVATION (FT) V.S. SURFACE AREA (ACRES)

<table>
<thead>
<tr>
<th>Elevation</th>
<th>Surface Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1407.5</td>
<td>35.0</td>
</tr>
<tr>
<td>1416.0</td>
<td>35.0</td>
</tr>
<tr>
<td>1425.5</td>
<td>51.0</td>
</tr>
</tbody>
</table>

Using

\[ V = \frac{1}{3} (A_1 + A_2 + \sqrt{A_1 A_2}) \]

Normal Pool Storage (Elev. 1416.0)

\[ V = \frac{6}{3} \left( 35.0 + 35.0 + \sqrt{35.0 \times 35.0} \right) \]

\[ V = 230 \text{ AC.- FT.} \]

Top of Dam Storage (Elev. 1425.5 ft)

\[ V = \frac{16}{3} \left( 51.0 + 35.0 + \sqrt{51.0 \times 35.0} \right) \]

\[ V = 684 \text{ AC.- FT.} \]
CONTENTS

Plate 1 - Location Map
Plate 2 - Watershed Map
Plate 3 - Field Sketch from Visual Inspection
Plate 4 - Top of Dam Profile and Typical Cross-Section from Visual Inspection
Plate 5 - Bridge and Dam
REFERENCES:
1. U.S.G.S. 7.5' GILLET, PA.
   QUADRANGLE. PHOTOREVISED 1969
2. U.S.G.S. 7.5' BENTLEY CREEK, PA.
   QUADRANGLE. PHOTOREVISED 1969

PLATE I LOCATION PLAN
MILLERS POND DAM
REFERENCES:
1. U.S.G.S. 7.5' GILLET, PA.
   QUADRANGLE. PHOTOREVISED 1969
2. U.S.G.S. 7.5' BENTLEY CREEK, PA.
   QUADRANGLE. PHOTOREVISED 1969
Top of Dam Profile (looking downstream)

Length of Dam 230 feet

Minimum Top of Dam
Elev. 1425.5 ft.

Elev. 1422.3 ft.

Spillway Crest
Elev. 1416.0 ft.

Typical Cross Section @ Station 1+75

Crest Width 51 feet

1.5H:1V

Toe of Dam
Elev. 1403.8 ft.

Plate 4
APPROX. AREA OF POND 40 ACRES.
PRESENT AREA 28 ACRES.

CUT-OFF WALLS

LOCATION OF DAM
LENGTH 30 FT.

NOTE:
THIS PLAN DOES NOT REPRESENT
EXISTING CONDITION.

BRIDGE & DAM
AT MILLER'S POND
RIDGELEY TOWNSHIP, BEARFORD CO. PA.

CHARLES F. MAY - TROY PA.
'5-2-56.

PLATE 5
APPENDIX F

REGIONAL GEOLOGY
REGIONAL GEOLOGY

Miller's Pond Dam is located in the glaciated part of the Appalachian Plateau and Physiographic Province. The pond fills a broad stream valley with an average topographic relief of 300 feet. Miller's Pond impounds water from the upper reaches of Miller Run. The water discharging from the pond flows northeast to Bently Creek. Bently Creek, in turn, flows north into New York State.

The area has been glaciated at least three times and is covered by glacial ground morain of the Nebraskan, Kansan, and Wisconsin glaciations. No test boring information was available for review. Soil Conservation Service maps indicate soils in the vicinity of the dam to be yellowish brown, stoney-to-very-stoney silt loams of varying thickness.

Geologic data taken from the Pennsylvania geologic map indicate the bedrock underlying the dam is composed of undifferentiated rocks of the Susquehanna Group. In other parts of Pennsylvania, the Susquehanna Group has been subdivided into the Marine beds, the Catskill Formation, and the Oswayo Formation. In the area of Miller's Pond Dam, it is most likely that the lithologic units exposed at the surface are the Marine beds. These beds are composed of gray-to-olive brown shales, graywackes, and sandstones that contain "Chemung" beds and "Portage" beds including Burket, Brallier, Hartzell, and Trimmers Rock with the Tully Limestone at the base.
GEOLOGIC MAP
Miller's Pond Dam
NDI NO. PA 01004, Bradford County
Scale: One Inch Equals Approximately Four Miles
See Legend, Next Page