



August 11, 2021

SCE Project No.: 18302

Pennsylvania Department of Environmental Protection  
Bureau of Waterways Engineering & Wetlands  
Division of Dam Safety  
P.O. Box 8460  
Harrisburg, PA 17105-8460

**Re: Queen Esther Lake Dam, PADEP ID #D08-070  
Athens Township, Bradford County, Pennsylvania**

Dear Gentlemen:

Enclosed please find one hard copy and one electronic copy of "Queen Esther Lake Dam (Dam Permit #D08-070) 2021 Inspection Report". A summary of our findings for the dam is presented below:

Queen Esther Lake Dam

As described in the attached inspection report, Queen Esther Lake Dam is generally in good condition; however, the following items do need to be addressed:

1. Determine the operability of the lake drain.
2. Monitor the deterioration of the principal spillway discharge pipe.
3. Monitor the wet/seepage area at the toe of the downstream slope for signs of increased flow.

It is noted that these observations during the 2021 inspection are consistent with the observations in the 2015 inspection, indicating that there have not been any critical failures or increasing rate of deterioration of the dam and appurtenances.

If you have any questions concerning the inspection reports, please do not hesitate to call.

Very truly yours,

**SHUMAKER CONSULTING ENGINEERING  
AND LAND SURVEYING, D.P.C.**

Lisa C. Dolphin, P.E.  
*Senior Managing Engineer*

Cc w/ attachments:  
Mr. James Walck  
Queen Esther Estates Lot Owners Association  
1065 Queen Esther Drive  
Sayre, PA 18840

ALBANY, NY  
251 New Kameer Road  
Albany, NY 12205  
518-727-7113

BINGHAMTON, NY  
143 Court Street  
Binghamton, NY 13901  
607-798-8081 • Fax 798-8186

CLEVELAND, OH  
Cleveland City Center  
600 Superior Avenue  
Fifth Third Building, Suite 1300  
Cleveland, OH 44114  
(Virtual)

**DAM INSPECTION CHECKLIST**  
**Department of Environmental Protection**  
**Bureau of Waterways Engineering**  
**Division of Dam Safety**

**NAME OF DAM:** Queen Esther Lake Dam **DEP DAM NO.:** D08-070

**LOCATION:** Municipality: Sayre **County:** Bradford

**DEP CLASSIFICATION DATA:** Size: Category C **Hazard:** Category 3

**PHYSICAL DATA:**

**Type of Dam:** Earthfill **Height of Dam:** 26.5 feet **Normal Pool Storage Capacity:** 21 ac-ft

**ELEVATIONS:**

**Normal Pool:** 1146.5 **Pool at Inspection:** Normal Pool **Tailwater at Inspection:** Normal

**DAM OWNER:** Queen Esther Estates Lot Owners Association **OPERATOR:** Ed Gorman

**ADDRESS:** 1065 Queen Esther Drive Sayre, PA 18840

**PHONE:** 570-423-1378 **FAX NO.:** **E-MAIL ADDRESS:** gorman107@yahoo.com

**A completed and signed Dam Owners Notice Checklist is to accompany this Inspection Checklist.**

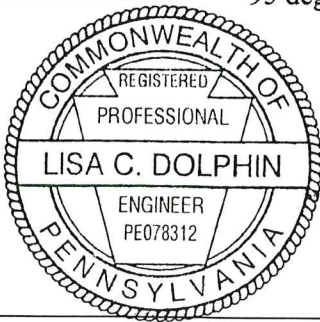
**PERSONS PRESENT AT INSPECTION:**

Name	Title/Position	Representing
Neil Shop, P.E.	Project Engineer	Shumaker Engineering
Nathan Horstman	Assistant Engineer	Shumaker Engineering
Ed Gorman	Dam Operator	Queen Esther Estates

**DATE OF INSPECTION:** 06/28/2021

**WEATHER:** Sunny

**TEMPERATURE:** 95 degrees



This is to certify that the above dam has been inspected and the following are the results of this inspection.

*LCD*

Signature of Registered Professional Engineer

08/13/2021

Date

(P.E. Seal Required)

ITEM	CONDITION	COMMENTS	MONITOR	INVESTIGATE	REPAIR
<b>EMBANKMENT: CREST</b>					
1	Surface Cracking	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Sinkhole, Animal Burrow	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Low Area(s)	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Horizontal Alignment	Good	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Ruts and/or Puddles	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Vegetation Condition	Grass, Good	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Warning Signs	On Crest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Additional Comments (Refer to item number if applicable):					
<b>EMBANKMENT: UPSTREAM FACE</b>					
10	Slide, Slough, Scarp	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Slope Protection	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Sinkhole, Animal Burrow	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Emb.-Abut. Contact	Good	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	Erosion	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Vegetation Condition	Majority of the slope has good grass cover. Tall vegetation at shoreline	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
16			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Additional Comments (Refer to item number if applicable): Item 15 - Tall vegetation along shoreline promotes animal burrowing. It is recommended that all brush, cattails, and tall vegetation be cut or removed.					

ITEM	CONDITION	COMMENTS	MONITOR	INVESTIGATE	REPAIR
<b>EMBANKMENT: DOWNSTREAM FACE</b>					
18	Wet Area(s) (No Flow)	Standing rust colored-water at toe near left abutment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	Seepage	See Item 18	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	Slide, Slough, Scarp	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	Emb. - Abut. Contact	Good	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	Sinkhole, Animal Burrow	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	Erosion	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	Unusual Movement	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25	Vegetation Control	Well vegetated, too tall	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
26			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Additional Comments (Refer to item number if applicable): Item 25 – Tall vegetation on slopes promote animal burrowing and make visual inspection difficult. It is recommended that all vegetation be maintained to 12 inches or less.

<b>EMBANKMENT: INSTRUMENTATION</b>					
ITEM	CONDITION	COMMENTS	MONITOR	INVESTIGATE	REPAIR
28	Piezometers/Observation Wells	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29	Staff Gauge and Recorder	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30	Weirs	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31	Survey Monuments	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32	Drains	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33	Low Flow Release	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34	Frequency of Readings	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35	Location of Records	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Additional Comments (Refer to item number if applicable):

ITEM	CONDITION	COMMENTS	MONITOR	INVESTIGATE	REPAIR
<b>DOWNSTREAM AREA</b>					
38	Abutment Leakage	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39	Foundation Seepage	See Item 18	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40	Slide, Slough, Scarp	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41	Drainage System	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42	Boils	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43	Wet Areas	See Item 18	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44	Reservoir Slopes	No problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45	Access Roads	Main road access	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46	Security Devices	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47	Act 91 Run-of-the-River Signs or Buoys	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Additional Comments (Refer to item number if applicable):

**SPILLWAYS: ERODABLE CHANNEL**

50	Slide, Slough, Scarp	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51	Erosion	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52	Vegetation Condition	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53	Debris	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
54			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Additional Comments (Refer to item number if applicable):

ITEM	CONDITION	COMMENTS	MONITOR	INVESTIGATE	REPAIR
<b>SPILLWAYS: NON-ERODABLE CHANNEL</b>					
56	Sidewalls	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
57	Channel Floor	Grouted Rip Rap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
58	Unusual Movement	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
59	Approach Area	Cattails in the inlet	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
60	Weir or Control	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
61	Discharge Channel	Grouted Rip Rap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
62	Boils	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
63			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
64			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Additional Comments (Refer to item number if applicable): Item 57/61 Grouted rip rap recently repaired with fresh grouting. Item 59 – Tall vegetation on dams promotes animal burrowing. Remove the cattails at the inlet of the auxiliary spillway.</p>					
<b>SPILLWAYS: DROP INLET</b>					
65	Intake Structure	8-in-diameter smooth steel pipe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
66	Trash rack	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
67			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
68			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
69			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Additional Comments (Refer to item number if applicable):</p>					

ITEM	CONDITION	COMMENTS	MONITOR	INVESTIGATE	REPAIR
<b>OUTLET WORKS</b>					
70	Intake Structure	See Item 65	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
71	Trash rack	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
72	Stilling Basin	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
73	Primary Closure	Gate Valve	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
74	Secondary Closure	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
75	Control Mechanism	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
76	Outlet Pipe	15-in-diameter smooth steel discharge pipe	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
77	Outlet Tower	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
78	Outlet Structure	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
79	Seepage	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
80	Unusual Movement	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
81	Outlet Channel	Brush and tall vegetation in channel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
82			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Additional Comments (Refer to item number if applicable): Item 76 – smooth steel discharge is heavily scaling. Monitor for continued deterioration. Item 81 – Remove the brush and vegetation from the principal spillway outlet channel.

### CONCRETE/MASONRY DAMS: UPSTREAM FACE

83	Surface Conditions	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
84	Condition of Joints	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
85	Unusual Movement	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
86	Abutment-Dam Contacts	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
87			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
88			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Additional Comments (Refer to item number if applicable):

NAME OF DAM: Queen Esther Lake Dam

DEP DAM NO.: D08-070

DATE: 06/28/2021

ITEM	CONDITION	COMMENTS	MONITOR	INVESTIGATE	REPAIR
<b>CONCRETE/MASONRY DAMS: DOWNSTREAM FACE</b>					
89	Surface Conditions	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
90	Condition of Joints	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
91	Unusual Movement	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
92	Abutment-Dam Contacts	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
93	Drains	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
94	Leakage	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
95			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
96			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Additional Comments (Refer to item number if applicable):					
<b>CONCRETE/MASONRY DAMS: CREST</b>					
97	Surface Conditions	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
98	Horizontal Alignment	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
99	Vertical Alignment	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
100	Condition of Joints	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
101	Unusual Movements	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
102			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
103			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Additional Comments (Refer to item number if applicable):					





**DAM OWNERS NOTICE CHECKLIST**  
**Department of Environmental Protection**  
**Bureau of Waterways Engineering**  
**Division of Dam Safety**

**NAME OF DAM:** Queen Esther Lake Dam **DEP DAM NO.:** D08-070

This is to certify that both the Downstream Hazard Description is accurate, and the Posted Notice locations listed below have been inspected and the following are the results of these inspections.

Ed Gorman

Name of Dam Owner

Signature of Dam Owner

Date

**This Dam Owners Notice Checklist is to accompany the Inspection Checklist filed by the Engineer.**

**EMERGENCY ACTION PLAN**

Date of Last Update of Emergency Plan: 2021

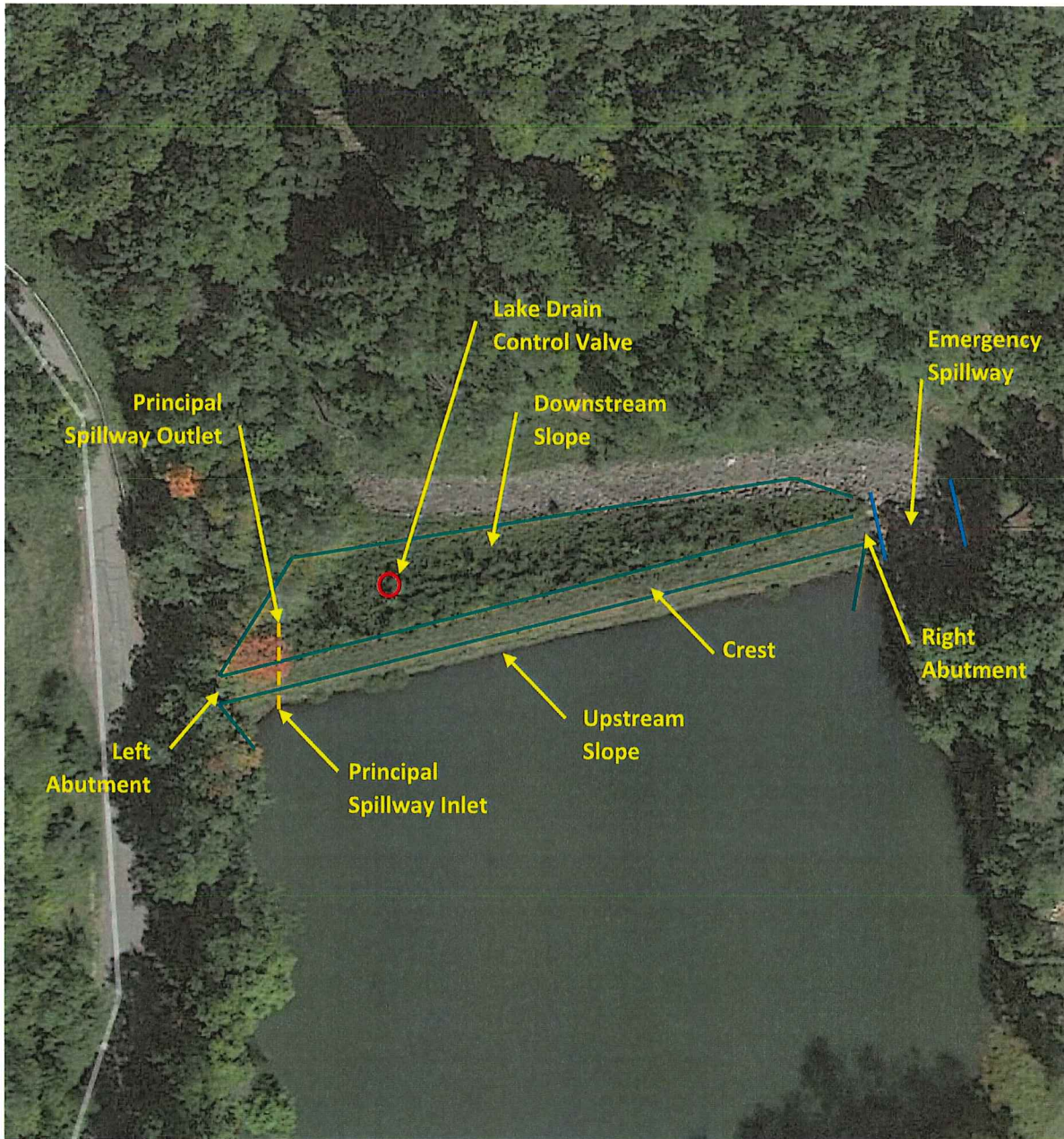
Downstream Hazard Description (Refer to sections II.C and II.D in the EAP), additionally, specify any new developments, structures, etc. downstream within the inundation area: The inundation area resulting from a sudden dam failure is generally limited to the channel. The flood wave will overtop Wilawana Road. There are no occupied structures, either permanent or seasonal within the inundation area.

**POSTED NOTICES** (Refer to section V.A in the EAP)

ITEM	DATE INSPECTED	LOCATION	COMMENTS	EXISTING	MISSING	REPLACED
1	6/28/2021	Athens Township Building	Owner is responsible to verify posting of Notice	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Additional Comments (Refer to item number if applicable):

# SITE MAP



## PHOTOGRAPHS



1. View of the upstream slope from the left abutment. Note the tall vegetation along the shoreline.



2. View of the upstream slope from the right abutment. Again, note the tall vegetation along the slope.



3. View of the crest of the dam from the left abutment.



4. View of the crest of the dam from the right abutment.



5. View of the downstream slope from the left abutment. Note the tall grass.



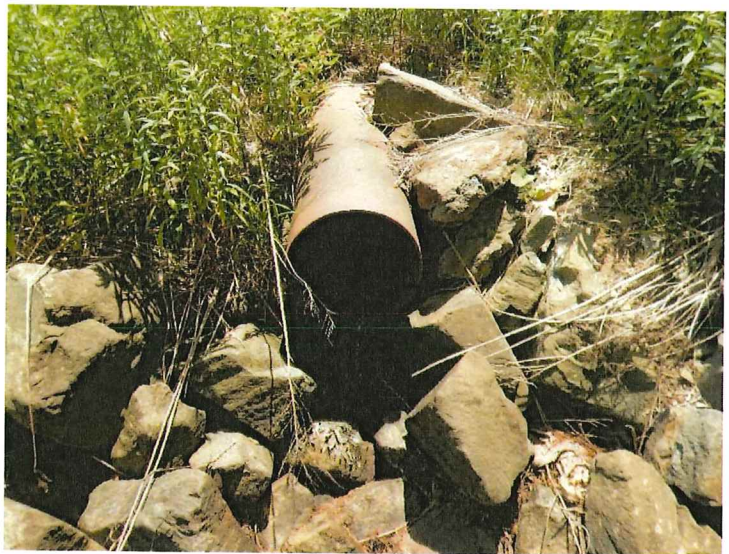
6. View of the dense brush growing in the left groin.



7. View of the downstream slope from the right abutment. Note the tall grass.



8. View of the principal spillway inlet.



9. View of the principal spillway discharge pipe.



10. View inside the principal spillway discharge pipe. Note the scaling of the metal.



11. View of the inlet of the auxiliary spillway channel. Note the cattails at the inlet.



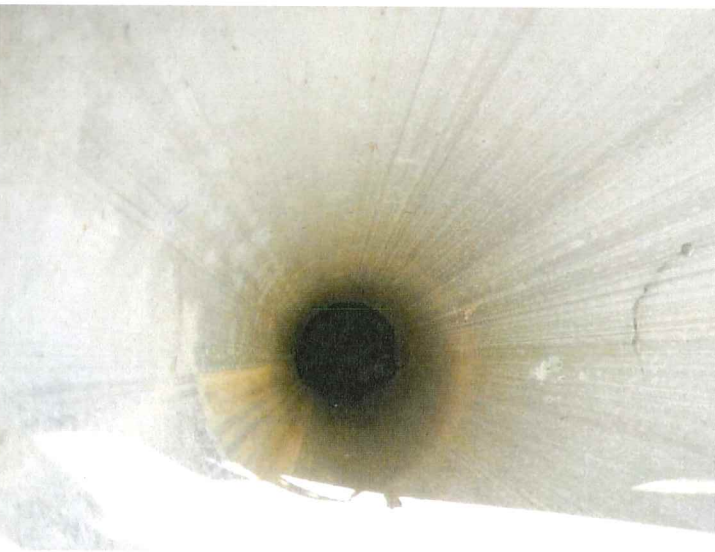
12. View of the concrete cut-off wall in the auxiliary spillway channel.



13. View looking downstream in the auxiliary spillway channel.



14. View of the lake drain valve control standpipe.



15. View inside the lake drain valve control standpipe.