



# DAM SAFETY INSPECTION REPORT



West Milton Low Head Dam  
File Number: 9742-003  
Class III  
Miami County, Union Township  
Inspection Date: December 30, 2009



In accordance with Ohio Revised Code Section 1521.062, the owners of dams must monitor, maintain, and operate their dams safely. Negligence of owners in fulfilling these responsibilities can lead to the development of extremely hazardous conditions to downstream residents and properties. In the event of a dam failure, owners can be subject to liability claims.

The Chief of the Division of Soil & Water Resources has the responsibility to ensure that human life, health, and property are protected from the failure of dams. Conducting periodic safety inspections and working with dam owners to maintain and improve the overall condition of Ohio dams are vital aspects of achieving this purpose.

Representatives of the Chief conducted this inspection to evaluate the condition of the dam and its appurtenances under authority of Ohio Revised Code Section 1521.062. In accordance with Ohio Administrative Code Rule 1501:21-21-03, the owners of dams must implement all remedial measures listed in the enclosed report.

*Division of Soil & Water Resources • 2045 Morse Road, Bldg. B-2 • Columbus, Ohio 43229-6693*

*[www.dnr.state.oh.us](http://www.dnr.state.oh.us)*

*In July 2009, the Ohio Department of Natural Resources, Division of Water, was merged with the Division of Soil & Water to become the Division of Soil & Water Resources.*

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## Required Remedial Measures

The requirements listed below are based on observations made during inspection, calculations performed, and requirements of the Ohio Administrative Code (OAC). A checklist noting all observations made during the inspection has been enclosed. References to right and left in this report are oriented as if you were standing on the dam crest and looking downstream. West Milton Low Head Dam is a candidate for an inspection exemption. If you choose to pursue this exemption, please contact our office for guidance prior to obtaining the services of a professional engineer. See the "Inspection Exemption" fact sheet included in this section for additional information.

**Engineer Repairs and Investigations:** The owner must retain the services of a professional engineer to address the following items. Plans, specifications, investigative reports, and other supporting documentation, as necessary, must be submitted to the Division of Soil & Water Resources for review and approval prior to construction. The owner must complete these items and implement all engineered plans for improvement within 5 years unless otherwise stated. A record of all repairs should be included in the operation, maintenance, and inspection manual.

1. No engineer repair or investigation items for this report. If significant repairs or modifications are proposed in the future, the owner must retain the services of a professional engineer to prepare the plans, specifications, investigative reports, and other supporting documentation for review and approval by the Division of Soil and Water Resources prior to construction.

**Owner Repairs:** The owner must address the following items. The owner may perform the work or hire a contractor. Repair activities should be documented in the operation, maintenance, and inspection manual.

No owner repairs for this report.

Trees and brush are not permitted on embankment surfaces or earthen spillways.

The embankment crest must have a uniform elevation.

Rodent burrows weaken dam embankments and must be repaired. Rodent activity must be controlled.

The embankment and spillways must be protected from erosion. A healthy grass cover should be present on embankment and spillways as needed, and rock riprap must be cleared of vegetation and replenished periodically.

A satisfactory trashrack and/or antivortex plate must be present at the inlet of the principal spillway.

Spillways must be able to flow at their full capacities; debris and vegetation must be periodically removed.

The lake drain must be operable and accessible. Routine maintenance of the lake drain should be performed annually and should include operation and lubrication of the valve/sluice gate in accordance with the manufacturer's specifications. Use caution if the operability is unknown. If the drain no longer functions contact the Division of Soil & Water Resources to discuss repair or replacement.

Embankment drains and spillway drains must be periodically maintained to ease monitoring and functionality. Pipe outlets should be marked and cleared regularly to allow the owner to quickly identify changing seepage conditions in the dam.

A spillway must convey flow without excessive leakage.

This dam must have an operation, maintenance, and inspection manual (OMI) and an emergency action plan (EAP). Prepare an OMI and/or an EAP. Guidelines for the preparation of these documents are included with this report. *A plan to release impounded water upstream in a controlled manner in the case of an emergency must be included in the OMI and EAP.*

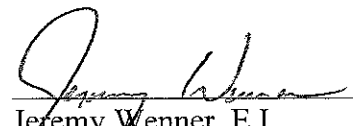
Flow through a deteriorated spillway subjects it to further deterioration and potentially failure. *Concrete deterioration was noted on the downstream face of the dam and in some sections of the dam is severe. Monitor the entire structure for any signs of rapidly deteriorating concrete. Severely deteriorated concrete must be repaired in order to prevent likely failure of the dam.*

**Owner Dam Safety Program:** In accordance with Ohio Revised Code (ORC) Section 1521.062, the owner of a dam shall maintain a safe structure and appurtenances through inspection, maintenance, and operation. A dam, like any other part of the infrastructure, will change and deteriorate over time. Appurtenances such as gates and valves must be routinely exercised to ensure their operability. Inspection and monitoring of the dam identify changing conditions and problems as they develop, and maintenance prevents minor problems from developing into major ones. Dam owners must have these procedures documented in an OMI.

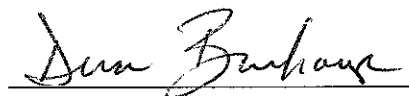
Despite efforts to provide sufficient structural integrity and to perform inspection and maintenance, dams can develop problems that can lead to failure. Early detection and appropriate response are crucial for maintaining the safety of the dam and downstream people and property. The ORC requires the owner to fully and promptly notify the Division of Soil & Water Resources of any condition which threatens the safety of the structure. A rapidly changing condition may be an indication of a potentially dangerous problem. The Dam Safety Engineering Program can be contacted at 614/265-6731 during business hours or at 614/799-9538 after business hours. Dam owners must have emergency preparedness procedures documented in an EAP.

The following references regarding dam safety and lake management are provided for your use and information:

- (1) OMI and EAP guidelines
- (2) Common Problems for Small Dams, including five fact sheets
- (3) "Ohio Pond Management Handbook"

  
\_\_\_\_\_  
Jeremy Wenner, E.I.  
Project Engineer  
Dam Safety Engineering Program  
Division of Soil & Water Resources

*4/14/2010*  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Dena Barnhouse, P.E.  
Project Manager  
Dam Safety Engineering Program  
Division of Soil & Water Resources

*4-14-10*  
\_\_\_\_\_  
Date

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This inspection was performed pursuant to the authority granted to the Chief of the Division of Soil & Water Resources in ORC Section 1521.062.

 Apr 17, 2010

Keith R. Banachowski, P.E.                      Date  
Program Manager  
On behalf of David Hanselmann, Chief  
Division of Soil & Water Resources

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Photograph No. 1:

Crest of the structure looking toward the left end of the dam. The crest of the dam varies in elevation due to deteriorated concrete along the crest.



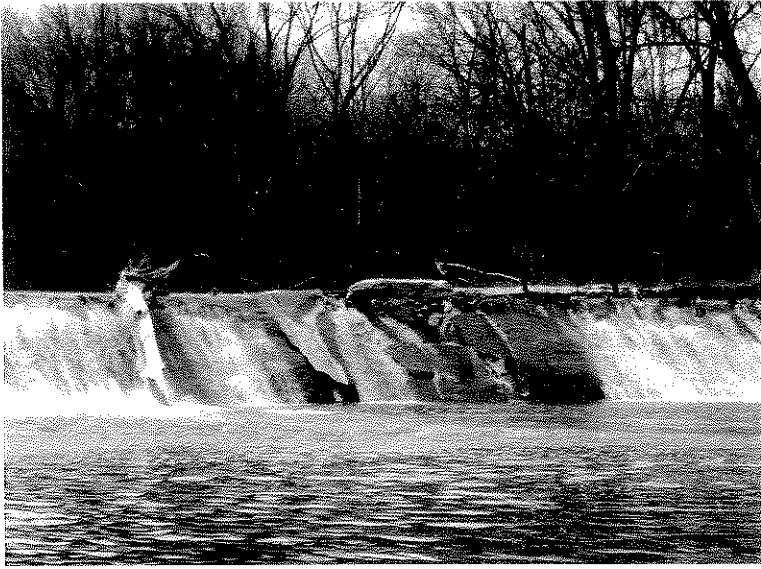
Photograph No. 2:

Endwall on the right end of the dam. The endwalls generally prevent flow from escaping onto the right and left abutments for typical river flow.



Photograph No. 3:

Overview of the downstream face of the structure.



Photograph No. 4:

Concrete deterioration and cracking approximately 100 feet from the left end of the dam. Continued deterioration will result in failure of the dam in this area.



Photograph No. 5:

Downstream river channel.

# Dam Classification Checklist

Name of Dam: West Milton Low Head Dam File Number: 9742-003  
 County: Miami Date: December 30, 2009 Engineer: JMW

The classification of a dam is based on three factors: the dam's height, storage capacity, and potential downstream hazard. The height of the dam is the vertical distance from the crest to the downstream toe. The storage capacity is the volume of water that the dam can impound at the top of dam (crest) elevation. The downstream hazard consists of roads, buildings, homes, and other structures that would be damaged in the event of a dam failure. Potential for loss of life is also evaluated. Various dam failure scenarios must be considered, and they include failures when the dam is at normal pool level and failures during significant flood events. Each of the three factors is evaluated, and the final classification of the dam is based on the highest individual factor. Class I is the highest and Class IV is the lowest. The classification of a dam can change based on future development along the downstream channel.

This checklist is intended to establish or verify the appropriate classification in accordance with the Ohio Administrative Code – it does not necessarily show all potential hazards or the full extent of inundation. In addition, elevations and dimensions are estimated.

<b>HEIGHT CLASSIFICATION</b>	<b>STORAGE CLASSIFICATION</b>	<b>EXEMPT~NON-REGULATED</b>
Dam Height = 13 feet	Stor. Capacity (top of dam)= 200 acre-feet	
<u>        </u> > 60' - Class I	<u>        </u> > 5000 acre-feet - Class I	<u>        </u> Height ≤ 6 feet
<u>        </u> > 40' - Class II	<u>        </u> > 500 acre-feet - Class II	<u>        </u> Storage ≤ 15 acre-feet
<u>        </u> > 25' - Class III	<u>    X    </u> > 50 acre-feet - Class III	<u>        </u> 6 ft. < Height < 10 ft. &
<u>    X    </u> ≤ 25' - Class IV	<u>        </u> ≤ 50 acre-feet - Class IV	<u>        </u> Stor. ≤ 50 ac-ft
<b>Height Class:</b>	<u>    IV    </u>	
<b>Storage Class:</b>	<u>    III    </u>	
<b>Hazard Class (see next page):</b>	<u>    IV    </u>	<b>Estimated Population at Risk:</b> ( <u>  none  </u> <del>1-5</del> <del>6-15</del> <del>16+</del> )
<b>Final Class:</b>	<u>    III    </u>	

**Class Changed (Yes, No)**

## Potential Downstream Hazard

I	II					III	IV	-	-	
Probable loss of human life	Loss of public water supply or wastewater treatment facility, release of health hazardous waste	Flooding of structure or high-value property	Damage to high-value or Class I, II, III dam or levee	Damage to major road (US or state route), disruption of only access to residential or critical facility area	Damage to railroad or public utility	Damage to rural building, not otherwise high-valued property, or Class IV dam or levee	Damage to local road (county and township)	Loss restricted mainly to the dam or agricultural/rural land	No hazard to structure noted	No hazard assessment; further investigation needed
							A			
West Milton Low Head Dam no longer serves as a water supply for the Village of West Milton Dam										

This checklist is intended to establish or verify the appropriate classification in accordance with the OAC – it does not necessarily show all potential hazards or the full extent of inundation.



## Flood Routing Summary

A dam must be able to safely pass severe flood events. A dam uses a combination of spillway discharge capacity and reservoir storage capacity, known as discharge/storage capacity, to prevent floodwater from overtopping the embankment crest and destabilizing the dam. When a dam has inadequate discharge/storage capacity, floodwater will overtop and erode the embankment. This can cause severe damage and dam failure.



Dam embankment prior to severe flood.



Erosion caused by floodwater overtopping the dam – a result of inadequate discharge/storage capacity.



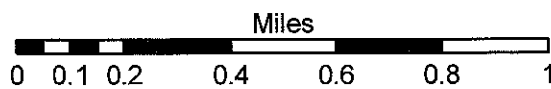
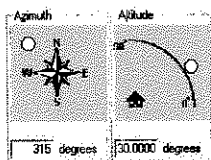
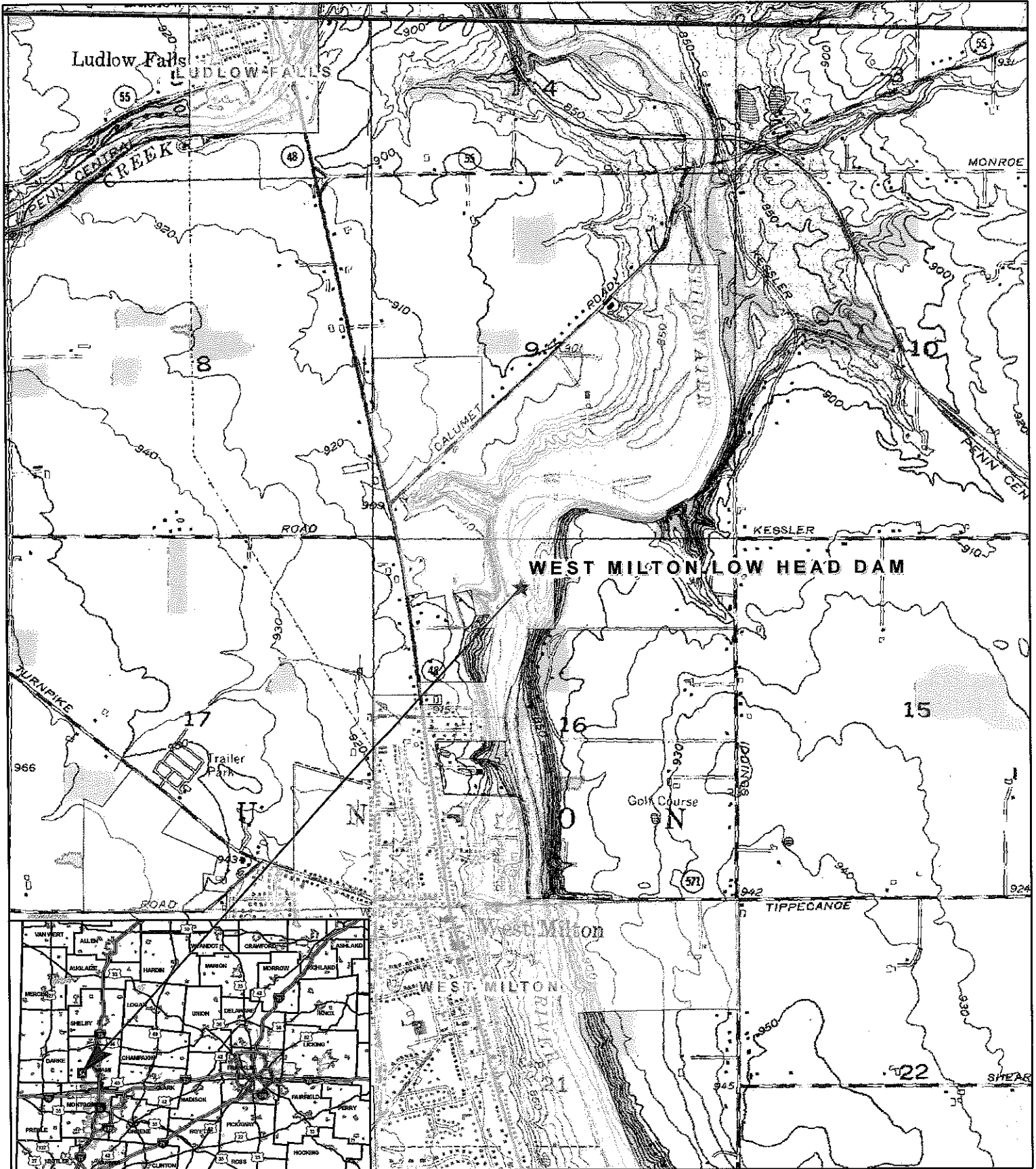
Erosion caused by floodwater overtopping the dam – a result of inadequate discharge/storage capacity and debris obstructing the 5-foot-diameter spillway pipe.

As part of this inspection, the Division of Soil & Water Resources did not thoroughly investigate this dam's discharge/storage capacity or its ability to safely pass the required design flood. In 2000 the Division of Soil & Water Resources performed hydrologic and hydraulic calculations to estimate the size of the design flood and the discharge/storage capacity of the dam. These calculations were used in the flood routings to determine the maximum water surface elevation in the reservoir for various flood events.

West Milton Low Head Dam is a Class III dam; therefore, in accordance with OAC Rule 1501:21-13-02, the required design flood is 25% of the Probable Maximum Flood (PMF) or the critical flood. This dam and its spillway system must safely pass the design flood without overtopping the embankment crest and destabilizing the dam. Flood routing calculations indicate that the dam will completely submerge, but not destabilize the dam; West Milton Low Head Dam appears to be able to safely pass the design flood.

# LOCATION MAP

## WEST MILTON LOW HEAD DAM - 9742-003



**Legend**

- ★ Dams
- Cities
- ▭ County Boundary
- ▭ Quad Boundary



# Dam Inventory Sheet

Name: WEST MILTON LOW HEAD DAM File No: 9742-003  
Reservoir: National #: OH00519  
Permit No.: N/A  
Class (Ht-Vol): III (IV - III)

**Owner Information**  
Owner: Village of West Milton Owner Type: Public, Local  
Address: 701 South Miami Street Multi-Dams: -  
Parcel No.:  
City: West Milton State: OH Zip: 45383  
Contact: Tony Howard, Municipal Mngr Phone No.: 937/698-1500

**Location Information**  
County: Miami Latitude Deg.: 39 Min.: 58 Sec.: 38  
Township: Union Longitude Deg.: 84 Min.: 19 Sec.: 30  
Stream: Stillwater River  
Nearest Affected Community: West Milton  
Community's Distance from Dam (miles): 0.38  
USGS Quad.: West Milton USGS Basin No.: 05080001

**Design/Construction Information**  
Designed By:  
Constructed By:  
Completed: 1921 Plan Available: NO At:  
Failure/Incident/Breach:

**Structure Information**  
Purpose: Recreation, Public  
Type of Impound.: Channel Dam  
Type of Structure: Concrete  
Drainage Area (sq. miles): 594 or (acres): 380160

**Embankment Data**  
Length (ft): 315 Upstream Slope:  
Height (ft): 13 Downstream Slope: 1.5H:1V  
Top Width (ft): 10 Volume of Fill (cub. yds.):

**Spillway Outlet Works Data**  
Lake Drain: NONE  
Principal: OVERFLOW DAM  
Emergency: NONE  
Maximum Spillway Discharge (cfs) 27669.9 Design Flood: 0.25 Flood Capacity: 0.50

Dam Reservoir Data	Elevation (ft-MSL)*	Area (acres)	Storage (acre-feet)
Top of Dam:	816	60	200
Emergency Spillway:			
Principal Spillway:	816	60	200
Streambed:	803		

Foundation: \*Elevations are not necessarily related to a USGS benchmark

**Inspection Information**  
Inspection 12/30/2009 JMW Phase I:  
History: 6/20/2000 TML Other Visits: 5/20/80 INV  
8/28/1987  
7/17/1975

Next Planned Inspection: 2009-2010 C - by Basin

**Operation Information/Remarks**  
ALSO KNOWN AS OBSTRUCTION NO. 11. Tony Howard ext. 103.

Emergency Action Plan: NO Format: OMI: No  
Annual Fee: \$108.00 Last Entry: 1/28/2010

# Dam Safety Inspection Checklist

Name of Dam: West Milton Low Head Dam Miami County  
 Date of Inspection: December 30<sup>th</sup>, 2009 Required Action  
 File Number: 9742-003 None Mon. Maint. Eng.  
 Class: III Design Flood: 0.25 Flood Capacity: 0.25      
 Haz.: IV, Height: IV, Volume: III

**Interview with Owner** (at the site):  
 Owner/Representative present:  Yes  No Name(s): Mr. Howard  
 Owner's Name(s): Village of West Milton  
 Address: 701 South Miami Street,  
 City: West Milton State: OH Zip (+4): 45383  
 Contact Person: Tony Howard, Municipal Mngr Telephone: 937/698-1500  
 Email Address: \_\_\_\_\_  
 Purpose of dam: Water Supply, Public

**Owner Dam Safety Program**  
 Emergency Action Plan NO None Mon. Maint. Eng.  
 EAP (document): No EAP on file at DSWR Up-to-date? -(yes, no)      
 Downstream development: None reported by owner.

**Operation, Maintenance, and Inspection** No None Mon. Maint. Eng.  
 OMI (document): No OMI on file at DSWR Up-to-date? (yes, no)      
 All drains operable? (yes, no) No lake drain

Normal rate of drawdown: N/A Accessibility for operation: N/A  
Maintenance  
 Frequency of mowing: N/A - concrete structure  
 Other maintenance: None since water supply source changed.

**Inspection**  
 Frequency and thoroughness of day-to-day & routine inspections: Someone from village staff visits the dam approximately once per year to check for safety concerns.  
 Problems found during inspections: None.

**Field Information**  
 Pool Elevation (during inspection): 6 inches above normal pool. Time: 2:00 (a.m./p.m.)  
 Site Conditions (temp., weather, ground moisture): 30°F, cloudy, frozen ground  
 Inspection Party: Dana Bainhouse, P.E.; Jeremy Wenzel, E.I.  
 Confirm the Following:  Dam Height (ft): 13  NP Area (ac): 60

**Reference Information**

Village of West Milton no longer uses this structure for water supply. See email dated April 12, 2006 in file. Also confirmed by municipal manager during 2010 Periodic Inspection.

Also Known As Obstruction No. 11. Tony Howard Ext. 103.

	Elev.	Area (ac)	Stor. (ac-ft)	(in.)
<b>TOD:</b>	816	60	200	0.0
<b>Em. S/w:</b>				
<b>Prin. S/w:</b>	816	60	200	
<b>Strmbd:</b>	803			

Impound. Type: Channel Dam  
 Structure Type: Concrete  
 Township: Union  
 Stream: Stillwater River  
 Designed By: \_\_\_\_\_  
 Constr. By: \_\_\_\_\_  
 Year Compl.: 1921 Plans Avail.? No At:  
 Fail./Incid.: \_\_\_\_\_

Basin (ac): 380160

Required Action

**Upstream Slope**

Gradient: *Vertical face*

Typical Problems: shoreline erosion, trees & brush, surface erosion, ruts, rodent burrows, earth slides, cracks

⇒ *Not visible due to river elevation.*

None	Monitor	Repair	Engineer
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Crest**

Width (ft): 10     Length (ft): 315     Total Freeboard (ft): 0.00

Typical Problems: low areas, trees & brush, surface erosion, ruts, cracks

⇒ *Some portions of the concrete crest had deteriorated to approximately 4 inches below normal pool.*

None	Mon.	Rep.	Eng.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Downstream Slope**

Gradient: 1.5H:1V

Typical Problems: trees & brush, surface erosion, ruts, rodent burrows, earth slides, cracks, seepage

⇒ *portions of downstream face severely deteriorated. Spalling, cracking and efflorescence noted along entire downstream surface. See photos for overview of condition.*

None	Mon.	Rep.	Eng.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Principal Spillway**

Overflow Dam

Typical Problems: Inlet obstructed, unsatisfactory trashrack/anti-vortex plate, material deterioration, misalignment, open joints, outlet erosion, outlet overgrown, undermining

⇒ *See notes above.*

None	Mon.	Rep.	Eng.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Sufficient measurements to perform hydraulics (dimensions, riser depth, outlet elevation)

Required Action

None  
**Emergency Spillway**  Freeboard (to normal pool, feet)

Typical Problems: Flowpath obstructed, material deterioration, erosion, misalignment, overgrown, undermining

→ Not required for this dam's configuration

None	Monitor	Repair	Engineer
<input checked="" type="checkbox"/>			

Sufficient measurements to perform hydraulics (dimensions, breadth, side slopes)

**Lake Drain**

None

Typical Problems: Poor operating access, inoperable, deteriorated/missing components, outlet erosion

→ A plan to release impounded water upstream of the dam in a controlled manner in case of emergency should be included in OMI.

None	Mon.	Rep.	Eng.
		<input checked="" type="checkbox"/>	

**Other**

None	Mon.	Rep.	Eng.

All Field Data Gathered (inspector's initials): JMW

Site Sketch

Investigate Downstream Hazard - Investigated using aerial imagery and elevation information in office



## Ohio Department of Natural Resources Division of Water Fact Sheet

Fact Sheet 01-61

# Dam Safety: Inspection Exemption

**T**he Division of Water, Dam Safety Engineering Program regulates dams to protect public safety. As part of this regulatory responsibility, the program conducts periodic safety inspections of existing dams under Ohio Revised Code (ORC) Section 1521.062. Some dams fall under regulatory jurisdiction based solely on their height or storage volume (see the "Classification of Structures" fact sheet No. 29) and do not pose a public safety risk. If failure of the dam would not constitute a hazard to life, health, or property, it may be eligible for inspection exemption under ORC Section 1521.064. To be "inspection exempt" means that the dam will no longer be inspected by the Division of Water (DOW) until such time as the potential downstream hazard changes. Also, the dam owner would not be required to pay the annual fee required under ORC Section 1521.063.

Please be aware that if any roads, buildings, or other structures are located downstream of the dam in the inundation area, it is often difficult to prove that the structures will not be damaged during a dam failure. In these cases, an inspection exemption will not be granted. It is strongly recommended that the dam owner discuss their project and the likelihood of an inspection exemption being granted with a Division of Water, Dam Safety Engineering Program engineer prior to beginning work on their project. This can potentially eliminate a great deal of time and expense for the owner.

To receive an inspection exemption, the owner must comply with the following procedure.

- Step 1. Submit a letter to the Chief of the Division of Water requesting an inspection exemption under ORC Section 1521.064.
- Step 2. Provide a map showing the location of the dam and the area downstream of the dam. A topographic map of the area may be acceptable.
- Step 3. Submit documentation to verify that any of the structures downstream of the dam noted on the map provided in Step 2 will not be damaged if the dam were to fail. Depending on the size of the

dam and the condition of the downstream channel (i.e. steepness, type of vegetal cover, width, depth), an engineer may be necessary to provide the documentation. In these cases, the required documentation may include flood inundation maps, dam failure studies, and other calculations or information needed by the Chief.

- Step 4. Submit written certification that the owner accepts liability for any injury, death, or loss to downstream property owners if the dam fails. The "Liability Certification" form can be obtained from the Division of Water, Dam Safety Engineering Program (See web site or call 614/265-6731). The liability certification is not transferable. If ownership of the dam changes, the new owner must submit a new "Liability Certification" form to continue the inspection exemption.

Before the Chief can issue an inspection exemption, the dam must meet certain basic safety criteria.

1. The dam and spillway must have enough combined capacity to safely pass the one hundred-year flood. If a private engineering consultant or the Division of Water has performed an inspection of the structure, the adequacy of the dam and spillway system should be known.
2. The dam must be in good condition and meet all requirements of the Chief of the Division of Water. These requirements typically include the removal of all trees and brush, and the repair of any structural deficiencies or significant instabilities. These requirements are listed in the previous Division of Water, Dam Safety Inspection Report.
3. The dam shall have an approved Operation, Maintenance, and Inspection Manual and Emergency Action Plan. Guidelines and examples of these documents can be obtained from the Division of Water (See web site or call 614/265-6731).

*Continued on back!*



## Ohio Department of Natural Resources Division of Water Fact Sheet

Fact Sheet 02-63

# Remediation Alternatives

**T**he Division of Water, Dam Safety Engineering Program, has the statutory responsibility to ensure that human life, health, and property are protected from dam failures. The program regulates dams meeting certain height and storage criteria based on the provisions of the Ohio Revised Code (ORC) and Ohio Administrative Code (OAC). These criteria are listed in the ORC and OAC and in the Division of Water's Construction Permit and Dam Classification fact sheets. For all dams meeting these criteria, the program regulates their construction, operation, and repair to ensure that dams meet the required safety standards set forth in the ORC and OAC.

When the program finds that a dam has been constructed without a permit or that an existing dam does not meet the required safety standards, the Division of Water directs the owner to bring the dam into compliance. For a dam built without a construction permit, the owner would receive a letter that directs the owner to obtain a construction permit by following the construction permit requirements listed in the OAC and ORC. For an existing dam, the owner would receive a dam safety inspection report that lists required remedial measures. The owner must accomplish all of these required remedial measures. As alternatives to obtaining a construction permit or to accomplishing the required remedial measures listed in the inspection report, the owner may (a) remove the dam, (b) breach the dam, (c) modify the height of the dam to make it exempt from all or a portion of the construction permit and periodic inspection requirements, or (d) modify the purpose of the structure so that it does not meet the definition of a dam. Additional information about each of these alternatives is listed below.

### Remove the Dam

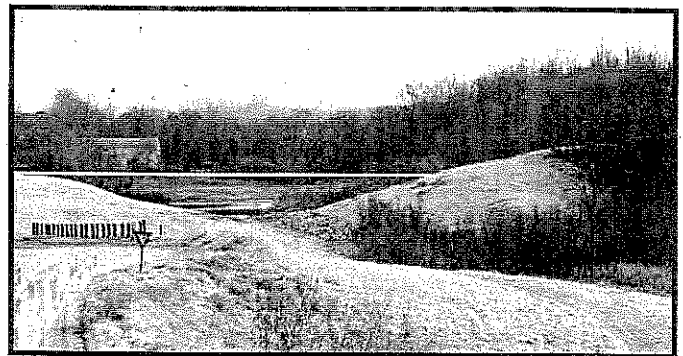
**Description:** Dam removal consists of complete removal of the dam embankment to restore the original relief of the site. Removing the dam alleviates the need to obtain a construction permit or to accomplish the required remedial measures listed in the inspection report.

**Requirements:** The following items must be prepared by a registered professional engineer and submitted to the Division of Water for review and approval: a plan for lowering the lake level, construction plans and specifications for removing the embankment, plans and specifications for controlling sediment in the impoundment, a description of erosion protection in the breach and dam embank-

ment foundation areas, and a construction schedule. Other items may be required in certain circumstances. It is the responsibility of the owner to hire a qualified registered professional engineer.

### Breach the Dam

**Description:** A breach is defined as an opening in a dam that prevents the dam from impounding a significant amount of water (see photograph). A breach extends from the upstream side of the embankment to the downstream side and typically has mild side slopes. A dam breach could be considered partial removal of a dam. Breaching the dam alleviates the need to obtain a construction permit or to address the required remedial measures listed in the inspection report.



Photograph of dam breach from downstream. White line shows former dam crest, and arrow shows center of breach.

**Requirements:** The following items must be prepared by a registered professional engineer and submitted to the Division of Water for review and approval: a plan for lowering the lake level, construction plans and specifications for constructing the breach, plans and specifications for controlling sediment in the impoundment, calculations or justification for sizing the breach, a description of erosion protection in the breach area, and a schedule for construction. Other items may be required in certain circumstances. It is the responsibility of the owner to hire a qualified registered professional engineer.

*Continued on back!*

## Agencies Associated with Dams and Lakes

The Division of Soil & Water Resources has the responsibility to ensure that human life, health, and property are protected from dam failures. The division provides fact sheets and dam safety information for dam owners on the division's web site: [www.dnr.state.oh/water](http://www.dnr.state.oh/water). Other governmental agencies are involved with the lakes and streams associated with dams, but have other responsibilities. Listed below are several relevant agencies that dam owners may be interested in contacting.

### County Emergency Management Agency



County Emergency Management Agencies (EMAs) serve the public in disaster preparedness, public safety, and emergency management at the county level. County EMAs are responsible for coordinating relief efforts related to manmade and natural disasters. In the case of a dam emergency, the County EMA is one of the dam owner's first contacts. Telephone: 937 339-6400x230

State Web Site: <http://ema.ohio.gov/index.aspx>

County Web Site: [http://eoc.ema.state.oh.us/OpsCenter/Contacts/OEMAT/telephoneDirectory/CountyDirectorList\\_web.aspx](http://eoc.ema.state.oh.us/OpsCenter/Contacts/OEMAT/telephoneDirectory/CountyDirectorList_web.aspx)



### Soil & Water Conservation District

County soil and water conservation districts (SWCDs) serve communities by providing assistance to urban and agricultural land users. SWCDs specialize in soil erosion prevention and water management. Some of services offered by county SWCD offices include survey and design of grassed waterways, erosion control structures, surface and subsurface drainage, farm ponds, and livestock waste management facilities. SWCDs also sponsor a number of information and education programs. In addition to these services, SWCDs may utilize assistance from the USDA Natural Resources Conservation Service (NRCS) for some technical matters.

<http://www.dnr.state.oh.us/soilandwater/swcds.htm> - County

<http://www.dnr.state.oh.us/soilandwater/> - State

937-335-7645 - Telephone

### Natural Resources Conservation Service



Since 1935, the Natural Resources Conservation Service (originally called the Soil Conservation Service) has provided leadership in a partnership effort to help America's private landowners and managers conserve their soil, water, and other natural resources. NRCS employees provide technical assistance based on sound science and suited to a customer's specific needs. NRCS provides financial assistance for many conservation activities.

Web Site: <http://www.nrcs.usda.gov/>

### Division of Wildlife



The Division of Wildlife within the Ohio Department of Natural Resources manages fish and wildlife of the state. The division offers assistance in stream improvement and pollution investigations and provides fishery information and publications on pond stocking. Information regarding pest and rodent control can be obtained by visiting the division website or by contacting the regional office. The

937-372-9261 - District Office 5

[www.dnr.state.oh.us/wildlife/Contact/default.htm](http://www.dnr.state.oh.us/wildlife/Contact/default.htm) - Web Site

Division of Wildlife should be contacted before starting any construction activity where loss of aquatic life is anticipated.

### Ohio Environmental Protection Agency



The Ohio Environmental Protection Agency (EPA) establishes environmental guidance and enforcement standards for the state. In particular, the Division of Surface Water provides assistance for matters pertaining to rivers, lakes, and streams in Ohio. The Division of Surface Water can provide information and assistance in developing best management practices for the control of point and non-point pollution sources and spills. Suspected pollution spills can be reported directly by using the Ohio EPA Spill Hotline at 1-800-282-9378.

District Office Southwest: 937-285-6357

State Web Site: <http://www.epa.state.oh.us/>

### OSU Extension



The Ohio State University (OSU) Extension utilizes knowledge and research developed by the Ohio Agricultural Research and Development Center, Ohio State, and other land-grant universities to assist communities, businesses, and individuals. In addition to a wide variety of community leadership and agricultural services for all ages, county OSU Extension offices offer information and assistance in agricultural water resource conservation and management, farm pond management, and safety, Ohio hydrologic cycles and non-point source pollution management.

419-422-6106 - Extension Region: West

<http://ohioline.osu.edu/county/index.php> - Web Site

Information regarding dry hydrant fire protection and legal liabilities associated with farm ponds in Ohio can be found on the extension website.



# Ohio Department of Natural Resources

TED STRICKLAND, GOVERNOR

SEAN D. LOGAN, DIRECTOR

David Hanselmann • Chief

## Division of Soil & Water Resources

April 17, 2010

Village of West Milton  
Tony Howard, Municipal Manager  
701 South Miami Street  
West Milton, OH 45383

RE: West Milton Low Head Dam  
File Number: 9742-003  
Miami County

Dear Mr. Howard:

Thank you for allowing Dena Barnhouse and Jeremy Wenner of the Division of Soil & Water Resources to conduct a safety inspection of West Milton Low Head Dam on December 30, 2009. This inspection was conducted by representatives of the Chief of the Division of Soil & Water Resources under the provisions of Ohio Revised Code (ORC) Section 1521.062 to evaluate the condition of the dam and its appurtenances. The Chief has the responsibility to ensure that human life, health, and property are protected from dam failures. Conducting periodic safety inspections and working with dam owners to maintain and improve the overall condition of Ohio dams are vital aspects of achieving this purpose. A copy of the laws and administrative rules for dam safety is available on the division's web site or by request. I have enclosed guidelines for preparing an operation, maintenance, and inspection manual and guidelines for preparing an emergency action plan. I have also enclosed information concerning general public safety around lowhead dams.

As part of this inspection, the inspection team evaluated the classification of the dam according to the mandates of Ohio Administrative Code (OAC) Rule 1501:21-13-01. Based on field observations, the classification of West Milton Low Head Dam has been changed from Class II to Class III due to the change in purpose of this structure. West Milton Low Head Dam no longer serves as a water supply for the village of West Milton. In accordance with OAC Rule 1501:21-13-02, the design flood for a Class III dam is 25 percent of the Probable Maximum Flood or the critical flood. Also, the annual fee amount for the dam will change in accordance with OAC Rule 1501:21-24-01. This change in the annual fee amount will be reflected on your 2010 invoice. The inventory records for this dam have been revised based on the information obtained from this inspection.

The enclosed inspection report was generated based on available information and is hereby provided for your use and study. Listed in the report are several repair, maintenance, and monitoring items that as a dam owner you are required by law to perform. Completion of these required items will improve the safety and overall condition of the dam. The Chief must approve

any plans for modifications or repairs to the dam. Following approval of the engineered plans, all necessary repairs must be implemented by the owner under the supervision of a registered professional engineer. It appears the overall condition of the dam has deteriorated and the structure should be repaired or removed.

Please be advised that you may qualify for a loan to make required repairs from the Ohio Dam Safety Loan Program administered by the Ohio Water Development Authority (OWDA). To find out more about the program, please contact OWDA's Loan Officer at 614/466-5822.

To gain information that will help improve the inspection program, a short survey has been developed and is enclosed. Please complete the survey and return it in the self-addressed envelope provided. Your feedback is important.

It is the Division's understanding that you are the owner(s) of this dam. Under Ohio's dam safety regulations, "owners" are "those who own, or propose to construct a dam or levee." OAC Rule 1501:21-3-01(V). A "dam" is defined as "any artificial barrier together with any appurtenant works, which either does or may impound water or other liquefied material ..." OAC Rule 1501:21-3-01(F). "Appurtenant works" include but are not limited to outlet works and spillway channels.

If you are not an owner of this dam, or believe that there are additional owners of the dam not addressed in this communication, please contact Jeremy Wenner. Please note that ORC Section 1521.062 requires a dam owner to notify the Chief of the Division of Soil & Water Resources in writing of a change in ownership of a dam prior to the exchange of the property.

Your cooperation in improving the overall condition of this dam is appreciated. Please contact Jeremy Wenner at 614/265-6719 if you have any questions.

Sincerely,



Keith R. Banachowski, P.E.  
Program Manager  
Dam Safety Engineering Program  
Division of Soil & Water Resources

KRB:jmw

Enclosures

P.S. In July 2009, the Ohio Department of Natural Resources, Division of Water, merged with the Division of Soil & Water Conservation to become the Division of Soil & Water Resources.