Alternatives Analysis for The New Kernsville Dam (D06-434) Removal Hamburg, PA

The Pennsylvania Department of Environmental Protection (DEP) submits this analysis of alternatives regarding a full dam removal to assist the Army Corps of Engineers in its consideration of alternatives which avoid or minimize adverse effects to the Schuylkill River Desilting Basin, which is eligible for listing in the National Register of Historic Places, as part of DEP's Individual Section 404 Permit application to eliminate the New Kernsville Dam. The dam is considered a contributing resource to the historic property.

Project Purpose and Need: Public Safety, Environmental Restoration, and Recreation

Public Safety- DEP is proposing to remove the New Kernsville Dam which is located along the Schuylkill River in Tilden and Windsor Townships, Berks County, and is situated between Port Clinton and Hamburg, Pennsylvania. The dam replaced a preexisting dam, The Kernsville Dam, which was located approximately 1,500 feet downstream of the current New Kernsville Dam. The dam was constructed as a result of the Pennsylvania Act 441, "Schuylkill River Desilting Project" and is one of many dams along the Schuylkill River constructed to form desilting basins. The construction of the concrete gravity dam was completed in November of 1949 by the Department of Forest and Waters, now known as the Department of Environmental Protection, for the purpose of creating an impounding reservoir to capture and prevent the downstream advancement of coal-rich silt carried by the Schuylkill River. The dam is classified as an Intermediate Size (Class B), High Hazard (Category 1) facility. Therefore, the dam has the potential for extensive property damage and possible loss of life along the Schuylkill River in the event of a failure.

Currently, the New Kernsville Dam is being operated and maintained by the Bureau of Abandoned Mine Reclamation (BAMR). The Commonwealth owns the dam and the surrounding property which have been closed to the public. Unfortunately, the dam, impoundment, and "Pulpit Rock" have drawn trespassers and associated illegal and careless activities resulting in 15 deaths and numerous injuries requiring emergency response since 1969. The dam is defunct and no longer serves a purpose.

Environmental Restoration- Since the dam's construction across the Schuylkill River, no aquatic organisms, save adult, flying insects, have been able to migrate upstream, nor, largely, downstream. The removal of the New Kernsville Dam will re-establish a free-flowing river with a natural flow regime and reduce siltation of spawning and feeding habitat in the former impoundment over time. The removal of the impounded pool and its slow, slack characteristics will also decrease water temperatures, restoring natural riverine habitat and improved seasonal flow and temperature variations. Removal will also restore natural sediment transport and nutrient cycling. Now that the dam has outlived its purpose, it only presents deleterious effects to the environment.

Recreation- The Pennsylvania Department of Conservation and Natural Resources (DCNR) will acquire the encompassing property from BAMR, only after the dam and appurtenant structures are removed. The property will be designated as a green public recreation area, with uses including, hiking, biking, and bird watching. The dam removal and natural development of the property will greatly enhance angling and paddling opportunities on the river as a great obstruction (currently requiring portage for paddlers) and eyesore are removed. (See Appendix) Though the area is already home to outdoor recreation, this project will ameliorate property aesthetics and greatly augment the natural environment and recreational opportunities with hazards removed.

Project Description

A. Remove and spoil left and right concrete abutments.
B. Remove and spoil left concrete spray wall to elev. 363.0. Remove and spoil right concrete spray wall to el. 373.0 or 1 foot below finished grade.
C. Remove and spoil 380-foot length by 10-foot height of concrete spillway. Remove and spoil 220-foot length by 20-foot height of concrete spillway.
D. Remove and dispose of floodlights, hand railing, pipe drains, water stop, stoplog guides, stoplog frames, cable guiderail, floodlight corrugated metal sleeves, buoys, and all reinforcement steel.
E. Remove and dispose of cable winch, drum, steel framing, and concrete foundation
F. Remove and spoil concrete boat ramp and boat slip walls.
G. Place geotextile and aggregate over spoiled concrete.
H. Excavate and grade site as shown on Drawings and as directed by the Department.
I. Seed and mulch all disturbed areas.

ALTERNATIVES TO THE PROPOSED REMOVAL PLAN

The Pennsylvania Department of Environmental Protection considered the design purpose of the dam, current condition of the dam and the situation of the surrounding property, and the dam's future. The dam has outlived its purpose as there is no longer a need to trap coal fines. The dam does not provide flood control or hydropower, nor does it provide ecological benefits and functions.

The dam and surrounding property persist as a liability which has taxed the owners, law enforcement, and taxpayers. Although the dam structure is currently sound, it impedes natural processes, blocks aquatic organism passage and navigation, presents a public hazard, and it will continue to deteriorate over time as all dams do.

Looking to the future, this guaranteed deterioration means that costly maintenance and rehabilitation are imminent. Continued vandalism of any structure left is likely, would be difficult to remedy, and would detract from the aesthetic value of the property. Furthermore, DCNR will only acquire the property if the dam and all man-made structures are eliminated to achieve their vision to maximize the natural potential of the property. Based on these considerations, DEP determined that the only alternative which offers solutions to the myriad issues is the complete elimination of the dam.

Four alternatives were considered to address concerns over the dam. Three were ruled out because they failed to address significant concerns over the environment, public safety, and/or they do not jibe with DCNR's acquisition conditions and vision for the property. Those options were:

1. No action:

DEP determined that this option was unacceptable since perpetual dam maintenance and rehabilitation for a dam which serves no purpose does not make practical or budgetary sense. This alternative also sustains a public safety hazard and a static state of environmental degradation for the life of the dam. Because the dam is isolated, the required policing of the area would place an unnecessary strain on law enforcement. **Some have suggested constructing a fish passage facility with this option. Fish passage facilities are very expensive to construct and maintain and most are largely ineffective.

2. Conduct a breach with the minimal acceptable breach size:

This option was declined for ecological, public safety, and aesthetic reasons. This dam and its impoundment have been a popular draw for thrill seekers and deviant behavior, resulting in a significant number of deaths and injuries, vandalism, trespassing and littering. This has been a burden on the property owners, law enforcement and first responders. The finished product would allow for the river to flow freely but would fail to meet many goals involving environmental and recreational improvement. DCNR would not acquire the property and provide enhancements with this option.

3. Conduct a nearly-full breach but leave some portion of the dam or appurtenant structures intact: Any structure left intact, including the maintenance building, would present a hazard, eyesore and a liability for DCNR, who will not procure the property if any man-made structures are left visible. Graffiti has been an issue and will assuredly continue to be an issue with any remaining structures. Leaving any structure would be contrary to the goal and vision for DCNR to offer a natural, green, aesthetically pleasing recreational area. Like Alternative #2, this option would allow for the river to flow freely but would fail to meet many goals involving environmental and recreational improvement.

4. Remove the dam and all appurtenant structures: After consideration, DEP determined that the best alternative to eliminate or alleviate all concerns would be to remove the dam and all appurtenant structures. The project will include a dredging component.

Determination of Adverse Effect

On January 3, 2019, the Pennsylvania State Historic Preservation Office (PA SHPO) determined that the proposed removal of the dam and appurtenant structures, collectively a contributing resource to the National Register-eligible property, will result in an Adverse Effect to historic properties, the Schuylkill River Desilting Project (Key No. 156421).

Resolution of Adverse Effects

Because the Project will have an adverse effect, the Army Corps is charged with resolving the adverse effect through consultation. This includes developing and evaluating alternatives or modifications to the undertaking that could avoid, minimize, or mitigate adverse effects to historic properties.
As stated above, DEP considered alternatives to the chosen project. DEP provides the following to help the Corps to assess potential avoidance, minimization and/or mitigation for the project.

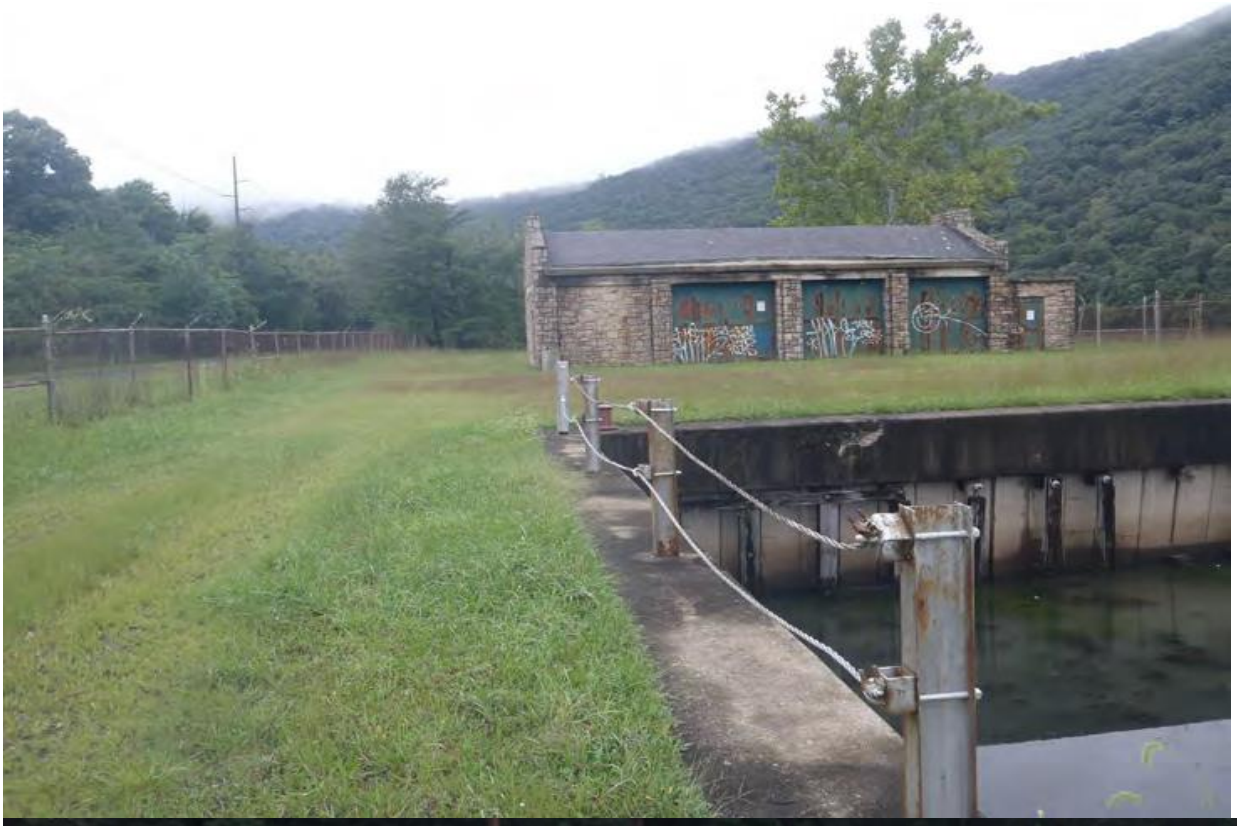
Avoid

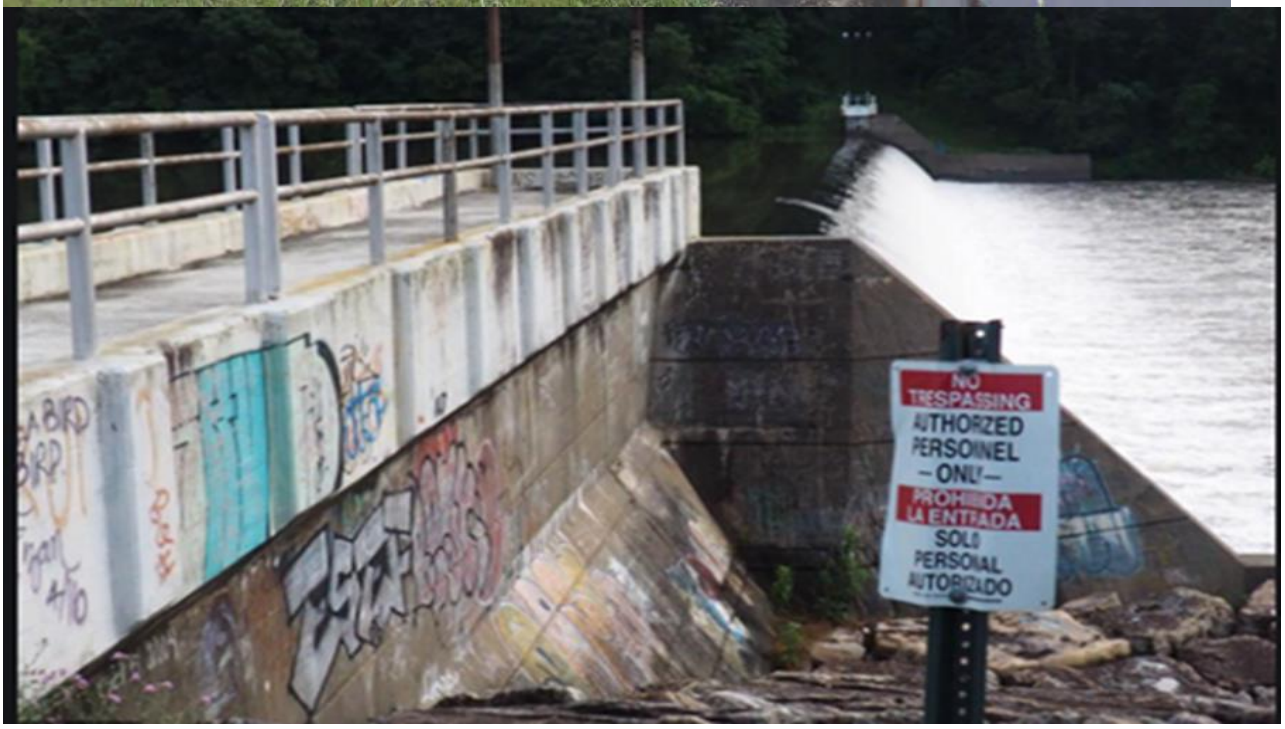
DEP believes that; considering the public safety concerns with the dam remaining in place, coupled with the fact that the dam serves no active purpose and maintains a static state of ecological degradation, removal of the dam cannot be avoided in order to provide any benefit to the law-abiding public contingent, property owners, or the environment.

Minimize

DEP's BAMR is not tasked with providing recreational properties or preserving natural areas for The Commonwealth and no longer operates the dam and impoundment as a peripheral mining cleanup operation. Because the dam presents a burden to BAMR and owning the property is no longer in BAMR's operational scope and mission, DCNR is interested in acquiring the property to present as a park, free from any responsibility involving any man-made structures and hazards. Therefore, leaving any remnants would not address the requirements for safety or recreation.

Though mentioned several times, the reality of vandalism and use of any structure left behind as a canvas for graffiti artists must be emphasized. There is no way to minimize the extent of the dam removal and leave some structure behind while maximizing the aesthetic potential of the site and meeting the procurement requirements of the future property owner.




NO
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Mitigate

In order to satisfy DEP's and DCNR's concerns and requirements for this project, there is no way to avoid or minimize adverse effects and DEP understands that mitigation is likely forthcoming. From design inception, there have been discussions among the design group about using kiosks/interpretive panels to memorialize the dam and its role in restoring ecological function to the Schuylkill River. DCNR is willing to assist DEP in the design, location, and content of waysides which could be installed to mitigate for the dam removal.

DEP is aware that there are many quality photos taken at the site before, during, and after construction of the dam. There is also existing, extensive documentation of the entire Schuylkill River Project which includes New Kernsville Dam and its predecessors.

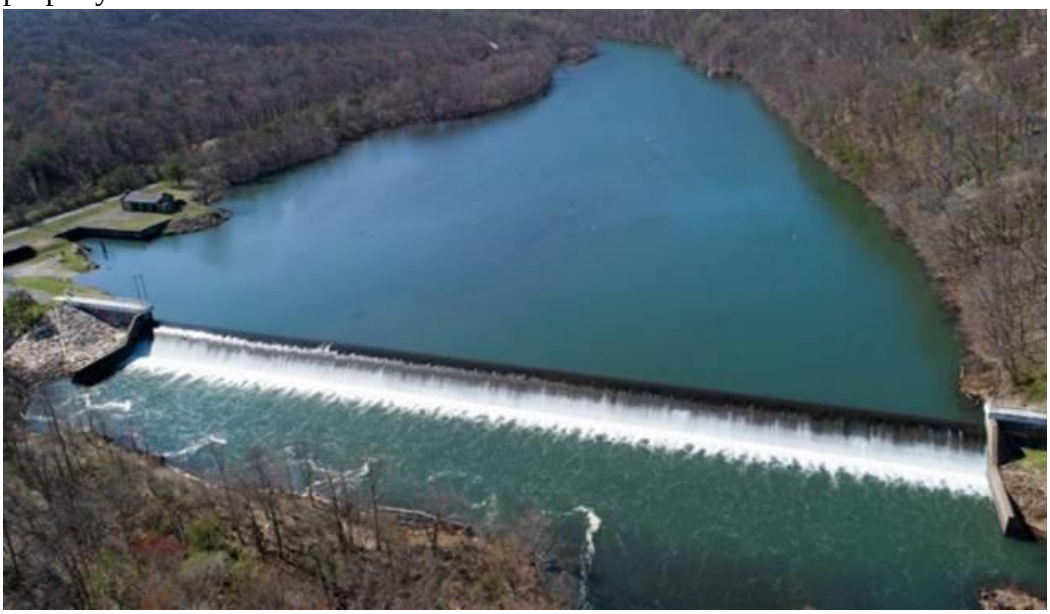
Conclusion:

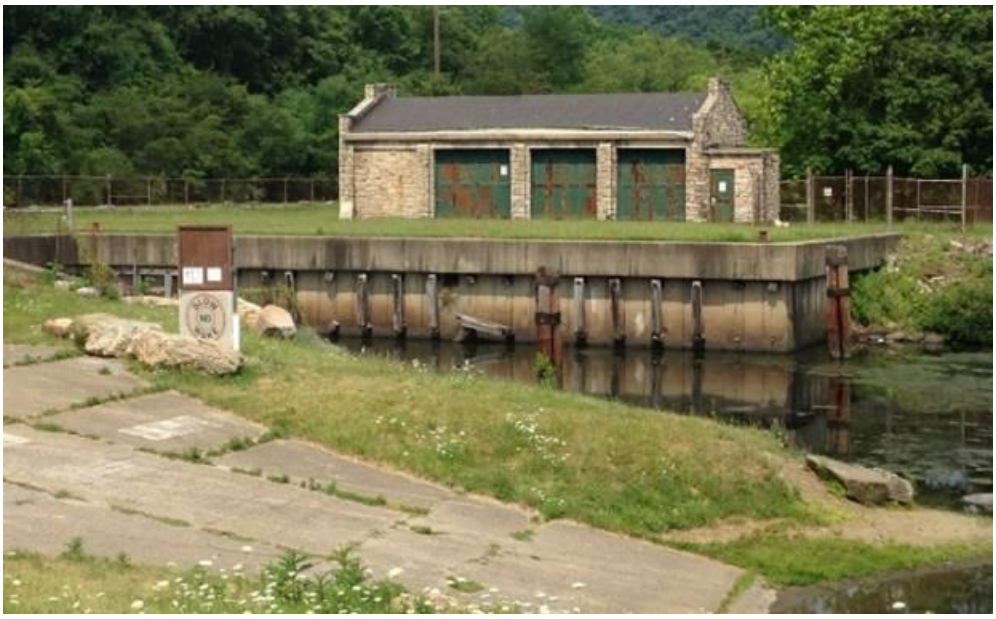
The Commonwealth of Pennsylvania's DEP has the obligation to act in the best interest of its citizens, among which, public safety, and preservation and restoration of environmental integrity are priorities. DEP believes that it can meet that obligation while satisfactorily achieving the memorialization of the historicity of the site. This can be achieved by coordinating with the US Army Corps of Engineers, the PA SHPO, and other consulting parties.

Appendix-DCNR Statement

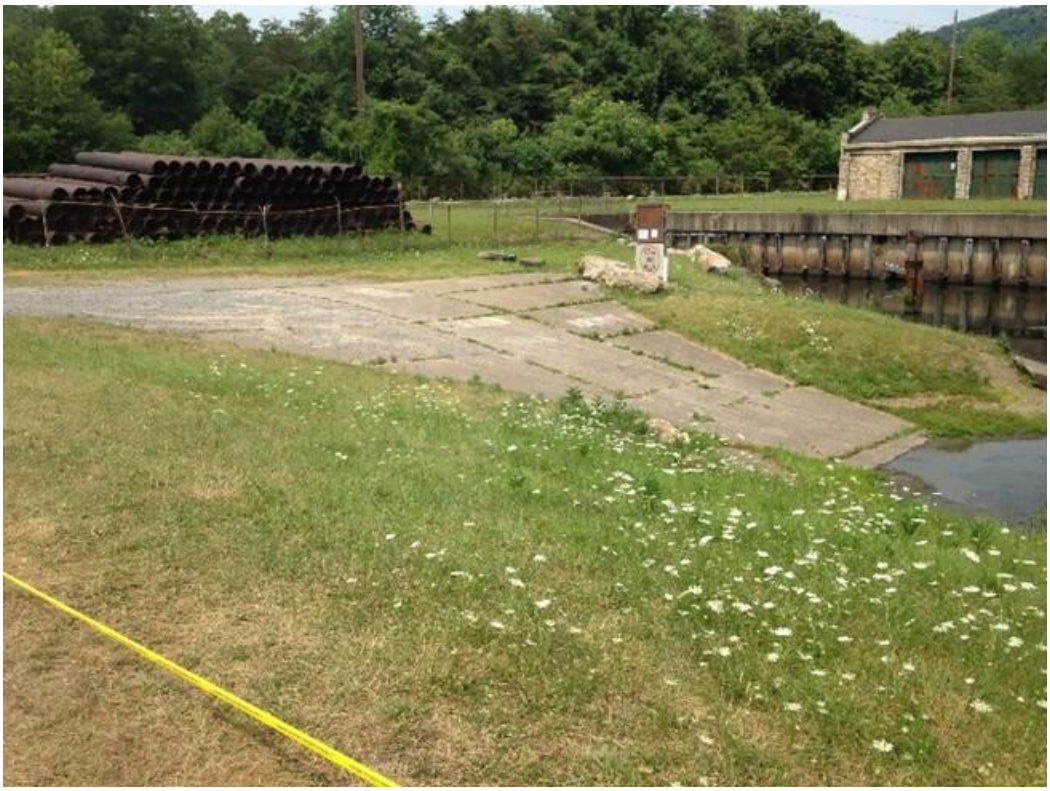
Prior to the transfer of DEP's New Kernsville Dam property to DCNR, we (DCNR-Forestry) insist the removal of all twentieth century human created infrastructure. To be more specific and so that no mistakes are made, twentieth century human created infrastructure includes and may not be limited to: siltation dam, wingwalls, railings, cable capstan, boat launch, concrete and steel slip area, dock walls, fencing, dredging pipe, storage garage, access road guiderails and posts and hardened access road and parking areas. We, DCNR, will also require landscape near the above mentioned features be recontoured to as near pre-Kernsville Dam construction as possible. Nineteenth century Schuylkill River Canal structures are truly historic and must remain as they will be found (as the water recedes), intact and untouched.

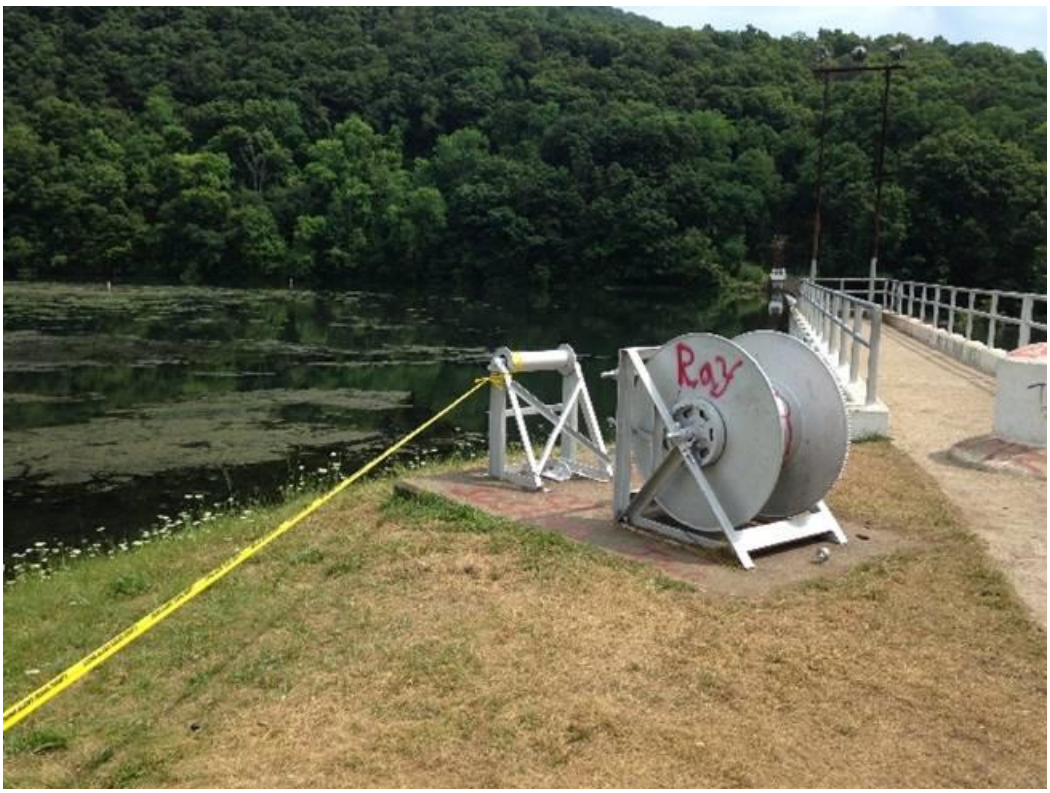
Photos (4) depicting human created infrastructure to be removed at DEP's New Kernsville Dam property.





1. Kernsville dam and siltation basin
2. Boat launch, fence, storage garage, mooring area at Kernsville dam





3. Dredge pipe and launch capstan

4. Dredge cable

We, DCNR, Bureau of Forestry have instructed DEP that we do not want ANY concrete/rebar or twentieth century human created dam or its associated infrastructure to be visible ANYWHERE on this property once demolition and rehabilitation has concluded. Siltation backed up behind the New Kernsville Dam is planned to be dredged. The deposition will be pumped approximately one mile south and dewatered at a location on the property.

Tim Ladner – District Forester

PA DCNR - Bureau of Forestry

Weiser Forest District