CAMBRIA AMD TASK FORCE
PASSIVE TREATMENT SYSTEM EVALUATION

CUCUMBER RUN
ALD PASSIVE TREATMENT SYSTEM

Prepared By:
Max Scheeler, Jeffrey J. Westrick P.E., Rich Beam P.G
July 29, 2008

PROJECT NO: AMD 26(2768)101.1
PROJECT NAME: Cucumber Run
PROJECT LOCATION: Stewart Township, Fayette County
RECEIVING STREAM: North Branch Cucumber Run to Cucumber Run to Youghiogheny River

PROJECT GOALS

The project is located on the North Branch of Cucumber Run within the popular and heavily used Ohiopyle State Park. Cucumber Run flows over Cucumber Falls which is a very popular scenic attraction publicized in the park literature. A side branch of the park's Great Gorge Trail follows Cucumber Run from its mouth at the Youghiogheny River, past Cucumber Falls for approximately ¾ mile to the junction of the North Branch. Mine drainage from abandoned deep and surface mines, primarily on the North Branch, have degraded water quality and caused iron staining within the main stem of Cucumber Run below the North Branch and at Cucumber Falls detracting from the appearance and aesthetics of this area within the park. The project was undertaken with the goal of improving general water quality within Cucumber Run below the North Branch and improving aesthetics at Cucumber Falls and along Great Gorge Trail.

PROJECT INFORMATION

- Project was a consultant design by CET Engineering Services, 1240 North Mountain Road, Harrisburg, PA 17112, (717) 541-0622. Contact: Pete Lusardi, Project Designer.
- Contractor: Casselman Enterprises, Inc., 140 West Union Street, Somerset, PA 15501
- Construction engineer: Denny Steel
- Inspector supervisor: Allen Pletcher
- Project inspector: Jim Leak
- Final Inspection: July 8, 1997
- Engineer's Estimate: $224,095.00
- Low Bid: $144,047.50
- Final construction cost: $166,059.86

PROJECT DESCRIPTION

This passive treatment system consists of two (2) Anoxic Limestone Drains (ALD) both discharging to an existing constructed Aerobic Wetland designated as Wetland No.1 . Both ALDs are uncharacteristic in that they are highly sloped drains instead of the normal level or near level profile. Both drains were covered with two layers of 6 mil polyethylene liner on the top and sides only. The seams of adjacent liner sheets were staggered so that 2 seams did not occur on top of each other between the layers. Adjacent sheets were overlapped 2 feet at seams and laid loose and unsealed. Top cover over each drain was specified as a minimum 2.5 ft. of impervious soil cover.

ALD1

ALD 1 is the larger and principal treatment unit of the system. Average treated effluent rate from ALD1 has been 15 GPM. ALD1 has an elongated teardrop configuration approximately 305 ft. long. The wider area, which is approximately 65 ft. wide by 5 ft. deep, is at the head of the ALD covering 3 deep mine discharges that developed after the SL 138-3-101.1 Deep Mine Sealing Project in 1980. It is unclear whether the ALD was constructed over these 3 discharges to enter as upwellings from beneath through the unlined bottom of the ALD or if the ALD was constructed over manholes and mine seal piping from the SL 138-3-101.1 Project. This wider head area of the ALD

was constructed with R3 (6" to 2") limestone. ALD 1 then tapers and falls 14 ft. over its length at approximately 4.6% slope to a 10 ft. wide by 4 ft. deep cross section at its effluent end. The tapered portion of ALD1 was constructed with AASHTO 1 (4" to ¾") limestone. Due to the highly sloped profile of ALD1, two clay barriers were constructed across the width of the drain to promote inundation of the limestone. The first barrier was placed 200 ft. downstream in the drain and the second at 293 ft. near the outlet. Each barrier has 1 ft. of stone over the top to allow for flow through the drain. ALD1 is impounded at the effluent end by a concrete endwall with a 1 ft. section of 18" PVC discharge pipe installed flush with the outside face of the endwall. This pipe had a 2 ft. x 2 ft. piece of stainless steel 2 in. wire mesh placed over the end inside of the ALD. Flow measurement for ALD1 is provided by a 90^{o} v-notch aluminum plate weir installed on a concrete headwall located 10 ft. downstream from the ALD endwall. Below the weir a ditch coveys the ALD effluent to the existing constructed aerobic wetland. This ditch falls steeply some 35 ft. in elevation over an approximate 130 ft. length providing aeration of the ALD effluent prior to entering the aerobic wetland at its northeast corner. At the surface, rock lined diversion ditches were installed along each side of the ALD to intercept surface water. Each ditch runs the length of the ALD and they then converge downstream of the weir into the ditch conveying the ALD effluent to the aerobic wetland.

ALD2

Located approximately 350 ft. southwest of ALD1, ALD2 is smaller in terms of mass of stone and treated flow although longer than ALD1. Average treated effluent rate from ALD2 has been 3 GPM. ALD2 has a consistent cross section of 4 ft. wide by 4 ft. deep throughout its extent. ALD2 consists first of an L-shaped main section, designated as ALD2A, which has a long 450 ft. main stem and short 70 ft. upstream leg end branch. 40 ft. downstream from the ALD2A leg end branch, a lateral branch, ALD2B 90 ft. long, enters and 80 ft. downstream from this a second lateral branch, ALD2C 50 ft. long, enters. At their upstream ends, the three branches of ALD2 each intercept one of three deep mine discharges that developed after the SL 138-3-101.1 Deep Mine Sealing Project. As with ALD1, it is unclear how each of these three discharges is intercepted and enters ALD2. The three branches of ALD2, on average, drop 10 ft. in elevation at 13% slope. The main stem of ALD2A drops 59 ft. in elevation again at 13% slope. The three branches and 220 ft. of the upstream main stem of ALD2A are constructed with R3 (6" to 2") limestone. The remaining 230 ft. downstream length of the ALD2A main stem is constructed with AASHTO 1 (4" to ¾") limestone. No internal clay barriers are indicated in the design or construction files for ALD2 as was the case in ALD1. The alignment of the main stem of ALD2A follows the original project construction access road for the site which drops steeply to the western edge of the existing aerobic wetland where ALD2 discharges directly into the northwest corner of the wetland via two 12 in. corrugated polyethylene plastic pipes, each 6 ft. long and set side-by-side. No flow measurement capability was provided under the project for ALD2. BAMR personnel hand-dug a small impoundment downstream of the ALD2 outlet and installed a small discharge pipe for bucket and stopwatch flow measurement.

Existing Constructed Aerobic Wetland No.1

Project SL 1015-103.1, completed in 1989, constructed four aerobic wetlands along the North Branch of Cucumber Run to treat discharges that developed after the 1980 SL 138-3-101.1 Deep Mine Sealing Project. Wetland No.1 from this project receives the effluent from ALD1 and ALD2. Wetland No.1 is approximately 0.4 Acres with average dimensions of 240 ft. long by 70 ft. wide. The influent end (east) of Wetland No.1 originally received raw mine discharge water and now receives the effluent from ALD1 at the northeast corner of the wetland. At this end of the wetland an open water area was constructed approximately 5 ft. deep by 55 ft. wide by 65 ft. long to serve as an initial sedimentation area. The rest of the wetland was constructed as a vegetated aerobic treatment area with 2 ft. of mushroom compost and no freestanding water depth. This area was vegetated with cattails as the dominant plant accompanied by rushes and sedges. Two 12 in. PVC pipes were installed side-by-side at the southwest corner of the wetland, diagonally opposite from the wetland influent point. These wetland effluent pipes discharge directly to the North Branch. An emergency spillway was constructed at the southwest end of the wetland. Effluent from ALD2 enters Wetlands No.1 at its northwest corner. At the time of design for the subject ALD project, Wetland No.1 was found to be short-circuiting directly through the center of the wetland and the western end, where effluent from ALD2 was to enter the wetland, was dry. The project constructed three R3 (6" to 2") stone baffles within the wetland to eliminate short-circuiting. These were designed and constructed as filter-through baffles, running the full width of the wetland with their tops six inches above the water surface. Also as part of the project, the wetland embankment was raised 12 inches to submerge existing dry areas, 90^{o} PVC elbows were installed on both of the wetland discharge pipes and turned up to accommodate the increased water level, ALD2 effluent was channeled around and upstream of the last baffle to prevent short-circuiting directly to the wetland discharge pipes and the emergency spillway had stone placed on the embankment invert. There are no wetland influent or effluent flow measurement capabilities in place.

PROJECT DESIGN INFORMATION

Design of two (2) ALD alkalinity generating units designated as ALD1 and ALD2.

Design Methodology - Sizing Equation For Required Amount Of Limestone:

$$M = \frac{Q \times d \times t}{V} + \frac{Q \times C \times T}{X}$$

Where:
- M = Mass of limestone (Tons)
- Q = Flow rate (GPM)
- d = Bulk density of limestone (Lb/CF)
- t = Detention time (Hours)
- V = Bulk void volume of limestone
- C = Predicted alkalinity generated (Mg/L as $CaCO_3$)
- T = Design life (Years)
- X = Calcium carbonate content of limestone

Design Constants For Both ALDs:

- d = 100 Lb/CF
- t = 15 Hours
- V = 0.5
- C = 250 Mg/L as $CaCO_3$
- T = 20 Years
- X = 0.8

ALD1 Specific Design Parameters:

- Q = 50 GPM
- M = 1,285 Tons = 25,700 CF

Actual Amount Of Limestone Used Due To Required Length Of ALD1 At Site:

- M = 1,582 Tons = 31,635 CF

ALD2 Specific Design Parameters:

- Q = 10 GPM
- M = 257 Tons = 5,100 CF

Actual Amount Of Limestone Used Due To Required Length Of ALD2 At Site:

- M = 520 Tons = 10,400 CF

SYSTEM MONITORING

- Monitoring Points Link
- Monitoring Site Map Map Link
- Monitoring Area Map Map Link

Water Sampling Schedule:

Thru 2000 – Quarterly
2001 & 2002 – Semi-Annually
2003 to Present – Annually

Water Quality Averages:

ALD1 Effluent

	Flow gpm	pH	Fe Total mg/l	Fe Ferrous mg/l	Acidity mg/l	Alkalinity mg/l	Al mg/l	Mn mg/l	SO_4 mg/l
Pre-Const	50	4.1	158	164.2	427	0.0	17	2.5	904.5
Post-Const	15.4	6.6	67.8	Not Reported	-11.6	152.7	0.0	1.7	446.3

ALD2 Effluent

	Flow		Fe Total	Fe Ferrous	Acidity	Alkalinity	Al	Mn	SO_4
	gpm	pH	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Pre-Const	10	3.6	131.5	166.1	514.6	0.0	26.9	4.6	684.9
Post-Const	3	6.7	5.4	Not Reported	-10.1	106.3	0.4	0.5	306.0

Wetland No.1 Effluent

	Flow		Fe Total	Fe Ferrous	Acidity	Alkalinity	Al	Mn	SO_4
	gpm	pH	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Pre-Const	21	3.4	15.5	4.8	76.1	2.5	3.1	1.5	311.6
Post-Const	66.6	6.8	1.1	Not Reported	-1.2	47.3	0.2	0.6	228.3

SYSTEM MAINTENANCE

No routine maintenance is performed on this system.

Past Maintenance:

BD 2333 (ER 2031)

Date: July 7, 1997. Project was completed in one day.
A custom fabricated ¼ in. aluminum plate air seal was ordered and installed by the BD Crew over the effluent opening in the concrete endwall of ALD1.
Total Cost: $834.96
Photo 1 Link Photo 2 Link Photo 3 Link

BD 2442 (ER 2140)

Date: January 24, 2000. Project was completed in one day.
BD Crew cleaned iron precipitate from channel conveying effluent from ALD1 into Wetland No.1.
Total Cost: $448.01.96

RESTORATION EFFORTS WITHIN THE WATERSHED

SL 138-3-101.1 Deep Mine Sealing Project

Project Construction: 1979 - 1980

This project was initiated for the same reason as the subject ALD system project as stated at the beginning of this report under PROJECT GOALS. The proposal for the SL 138-3-101.1 Deep Mine Sealing Project was to accomplish complete flooding of the deep mine workings within the Cucumber Run watershed. The project constructed mine seals and grout curtains at actively discharging deep mine entries. Grout curtains and impervious earthen embankment seals were constructed along lengths where surface stripping had cut into or very near deep mine workings. In some areas the nearness of such cuts was reported to be as close as 2 ft. Surface reclamation addressing an unreclaimed strip cut and acid impoundment near the present site of ALD1 was also included. In order to better determine the scope of the project, as to the number and location of mine openings and seep areas, a pre-design Exploratory Excavation project was done. Under this project the cropline was excavated on both sides of the North Branch and on Cucumber Run above the North Branch. As a result of this project a total of 34 openings were located and exposed. 29 of these openings were located on the North Branch alone, 19 on the north side and 10 on the south side. The additional 5 openings were located on Cucumber Run above the North Branch. A second pre-design project involving drilling and subsurface investigation was also completed. 8 borings were drilled to establish geology and test permeability for evaluation of the potential effectiveness of the mine sealing effort. Two piezometers were installed during the drilling project for monitoring of the mine pool and others were recommended to be installed as part of the main project. The mine seals constructed at entries were installed with 4 in. pvc drain pipes at the bottom. These pipes led to manholes located outside of the seals which housed valves to allow drainage of the mine pool if desired. The Engineer's Estimate in 1975 for the project was $1,318,000.00.

SL 1015-103.1 Construction of Wetland Treatment Systems

Project Construction: 1990
Original Contract Amount: $69,587.50
Final Construction Cost: $77,558.59

This project was initiated for the same reason as the subject ALD system project as stated at the beginning of this report under PROJECT GOALS. This project constructed four aerobic wetlands along the North Branch of Cucumber Run for the treatment of discharges that developed after completion of the SL 138-3-101.1 Deep Mine Sealing Project. Wetland No.1 completed under this project is the receiving wetland for the effluent from ALD1 and ALD2.

PROPERTY OWNER INFORMATION

Half of the project site property is owned by and the other half currently in the process of being transferred to the Commonwealth of PA, Bureau of State Parks. Easements with the original private property owner have expired. Once the property transfer to State Parks has been completed, consultation should be conducted for their concurrence to permanent site access under the existing MOU. Such permanent access using the existing site access road on State Parks property would require a permanent stream crossing for the North Branch of Cucumber Run.

SYSTEM PERFORMANCE EVALUATION AND RECOMMENDATIONS

Site Inspection Dates: May 19 & June 10, 2008
Completed By: Max Scheeler; Jeffrey J. Westrick; Rich Beam

Field Reconnaissance:

At the head end of ALD1, leakage in the form of surface upwellings is present around the ALD perimeter in the vicinity where the mine seeps enter the ALD. This leakage was discovered and monitored since October 2004. Average flow and water quality of the combined leakage is as follows:

Flow		Fe Total	Fe Ferrous	Acidity	Alkalinity	Al	Mn	SO_4
gpm	pH	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
11	3.5	45.6	46.4	133.7	0.0	2.3	2.3	309.7

- ALD1 combined flow from leaks looking upstream from lower end of ALD Photo Link
- ALD1 combined flow from leaks looking downstream from upper end of ALD Photo Link
- Leak at western edged of ALD 1 Photo 1 Link Photo 2 Link
- Leak at eastern edged of ALD 1 Photo Link

Iron deposits have accumulated in the area between the ALD1 endwall and the ALD1 weir. This area was originally designed as a stilling area for weir flow measurement. There is now a substantial velocity component of the flow going through the weir. Photo 1 Link Photo 2 Link

A search was conducted to locate piezometers installed under the SL 138-3-101.1 Deep Mine Sealing Project. On the SL plans, piezometer P7 was indicated as being located immediately upslope from the head end of ALD1 and as such, P7 was the primary target of this search. The area of P7 was found to have been extensively logged with skidder trails, brush piles, multiflora rose and thick vegetation covering the area. No sign of P7 was found. The 2nd priority piezometer, P6, was indicated as being located upslope from the head end of ALD2. At this location two manholes from the SL mine seals were first found. Immediately upslope from the manholes, some pieces of the P6 piezometer were found broken off and on the ground. The original location of P6 was not found.
Photo 1 Link Photo 2 Link Photo 3 Link

During the piezometer search the P7 search area above ALD1 was found to have many small rivulets of water which combined as they cascaded down over the slope and were then intercepted by the diversion ditches at the perimeter of ALD1. The P6 search area above ALD2 is within the reclaimed strip cut where linear impervious earthen seals were constructed along the crop line under the SL 138-3-101.1 Deep Mine Sealing Project prior to backfilling the highwall. At the P6 site broad non-point seepage was observed at high elevation along the backfill. This presence of water at both the P7 and P6 areas occurs at some 20 to 30 feet higher in elevation from the approximate cropline and suggests the possible presence of significant mine pool head behind the seals on this hillside.

A possible northern route for access to the site from the vicinity of Kentuck Knob was considered since this appeared to be the access route for the logging done around the project site. Upon field investigation this route was found to be extremely steep and has therefore been rejected.

- Additional Field Reconnaissance Photos: Photos Link Note: Opens as web page. Click Browse Menu and select Full Screen. Then use mouse to navigate through photos.

File Research:

Construction files for the subject ALD project were retrieved from archives in Harrisburg.

Inspector's Daily Reports for the construction of ALD1 reported encountering at least one manhole and piping and valves from the SL 138-3-101.1 Deep Mine Sealing Project during excavation and indicated that none of these existing facilities had been shown on the project plans. Apparently one of the mine seal manholes was first unexpectedly encountered during excavation at the head of ALD1 on the eastern side. One report indicates 3 pvc drain pipes from the mines into the manhole were broken and mine water released. The next day report states water from broken pvc pipes has slowed. A picture shows the removed manhole which was apparently buried on site. Photo Link Excavation at the head of ALD1 on the western side then apparently encountered a second manhole with a mine seal valve. Photo Link Inspector's report states water valve opened prior to placing stone. No indication of a manhole is mentioned but notes on the As-Built Plans state "Removed Existing Manhole Cover and Opened Valve."

Due to the very low flow measurements obtained for ALD2 during post-construction monitoring, speculation has existed that ALD2 had been only partially constructed. Review of construction files and photos indicate that ALD2 was constructed to its full extent as per plan. Construction file photos show two pipes being installed side-by-side at the downstream end of ALD2 for discharge into the wetland. Photo Link Inspector's report states two 12 in. pipes installed as per plan. 12 L.F of pipe was paid so apparently each of these pipes is 6 ft. long. Only a single ALD2 effluent pipe has been located in the field and monitored since completion of construction. Construction photos and notes indicate impervious soil was placed over the base area of ALD1 prior to placement of limestone. No indication of such impervious soil base being placed for ALD2 was found. In light of this and the fact that ALD2 is very long with neither of the ALDs having liner on the bottom, ALD2 flow may be being lost over the course of the drain. This and the monitoring of only one of a possible two effluent pipes may be responsible for the speculation that ALD2 had been only partially constructed.

Water Quality Trends and System Performance:

The semi-annual and annual frequency of system water sampling is geared more towards acting as a system malfunction alarm but is not preferable for credible trend analysis. With that said the following observations are still made:

ALD1

ALD1 flow trend remains relatively constant around 15 gpm. Flow Chart Link pH shows a slight increasing trend from about 6.5 to 6.8. pH Chart Link Alkalinity load generation trend is near constant at about 30 lb/day. Alk Chart Link Aluminum in the effluent has remained zero. Iron and manganese loading have exhibited a decreasing trend from about 14 to 9 lb/day for iron and 0.35 to 0.20 lb/day for manganese. Fe Chart Link Mn Chart Link

ALD2

ALD2 exhibits slightly more erratic flow ranging from 0.8 to 6.5 gpm with an average trend around 3 gpm. Flow Chart Link Alkalinity load generation trend has remained flat at 3 lb/day. Alk Chart Link pH shows a increasing trend from about 6.5 to 7.5. pH Chart Link Aluminum in the effluent has remained zero. Iron and manganese loading have exhibited a decreasing trend from about 0.6 to 0 lb/day for iron and 0.05 to 0 lb/day for manganese. Both iron and manganese loading have dropped to and remained at near zero since 2002. Fe Chart Link Mn Chart Link

Wetland No.1

Eliminating a recent flow measurement outlier of 330 gpm, Wetland No.1 has exhibited a rather flat flow trend from about 40 to 50 gpm with an average around 45 gpm. Flow Chart Link Alkalinity load generation has shown a steadily increasing trend from about 15 to 25 lb/day. Alk Chart Link pH has shown a slight

increasing trend from about 6.5 to 7.2. pH Chart Link Aluminum in the effluent has remained essentially zero. Iron loading has remained rather flat at about 0.8 lb/day. Fe Chart Link Manganese loading has been minor with a decreasing trend from around 0.35 to 0.15 lb/day. Mn Chart Link

Summary of Current System Status:

At the head end of ALD1, leakage in the form of surface upwellings is present around the perimeter of the ALD. Due to the high metals content of the discharge treated by ALD1, it is generally presumed that these leaks are due to area-wide plugging of the limestone within the upstream end of the drain. Indications are that ALD1 was constructed with broken or open pvc pipes from the SL 138-3-101.1 Deep Mine Sealing Project covered and embedded in the limestone at the head end of the ALD. These same leaks may therefore be due in part to these pipes being plugged also.

Heavy iron precipitate has accumulated in the stilling area behind the ALD1 weir and may be causing erroneous flow readings for ALD1 effluent.

A 2nd ALD2 effluent pipe is indicated to exist and may be buried in wetland sediment or embankment material.

The influent end of Wetland No.1 was constructed with a 5 ft. deep sedimentation area. This area is currently near full of sediment.

Recommendations:

1. An initial drilling project is highly recommended for the area upslope of ALD1 to establish mine pool elevation and evaluate the potential for a possible blow-out during maintenance operations on ALD1. This recommendation is believed to be critical in consideration that any such blow-out would enter Cucumber Run and proceed over Cucumber Falls discharging into the Youghiogheny River all within Ohiopyle State Park.
2. Permanent site access should be established with road conditioning for use by construction trucks and equipment as and when needed. Such access should include a permanent stream crossing if required by the route selected. Similar access within-site to system main components and problematic areas, such as the ALD1 endwall, weir and discharge channel to wetland plus wetland embankment perimeter, should also be considered.
3. As discussed with BD Crew foremen, the specifics for the resolution of the leakage at ALD1 can only be determined after exploratory excavation within the problem area of the drain. Anticipated solutions discussed include unplugging existing mine drain pipes; piping discharges from points outside the ALD through the clogged area to areas of clean stone; removing clogged stone and replacing with clean stone; or all or a combination of any of these. If the mine seal drain pipes are functioning or can be rehabilitated, installation of clean-outs might be considered. It should be kept in mind that any excavation within the ALD will require destruction of the liner which will need to be replaced. In consideration of the site's location within Ohiopyle State park, special attention should be given to E&S control.
4. Some form of provision for sampling of the raw water into ALD1 should be installed. At present no sampling of ALD1 or ALD2 raw water is possible. The preferred method would be to install a tap or taps of small diameter piping into the mine seal drain pipes if functioning or rehabilitated. Such piping would then run outside the drain with a small ball valve installed at the outlet for opening and sampling. Some sort of large diameter pipe could also be installed vertically to form a collection sump for raw water. An airtight cap could be installed to be removed for access and sampling. Similar provisions might be considered for ALD2 although three such devices would be required.
5. Accumulated iron precipitate should be removed from the area behind the ALD1 weir to re-establish this as a stilling area for the weir.
6. Exploration around the area of the ALD2 discharge into the wetland should be undertaken to see if a 2nd discharge pipe for ALD2 exists. If located the small embankment within the wetland should be modified to channel the discharge from both pipes along the wetland perimeter so as to enter upstream of the last stone baffle in the wetland. Some sort of more permanent flow measurement capability for ALD2 should be installed also, be it a weir or check dam with pipe, etc.
7. System monitoring after completion of all maintenance operations should be preformed on a more frequent basis, at least monthly, so that any affects can be detected and analyzed until the system has stabilized.

ATTACHMENTS

- Project Location Map: Map Link
- As-Built Drawing: Drawing Link
- Full Water Quality Data Spreadsheet: Spreadsheet Link
- Macros: N Br Cucumber Run Upstream & Downstream No. of Taxa / No. of Insects Charted: Chart Link
- Macros: Cucumber Run at Cucumber Falls No. of Taxa / No. of Insects Charted: Chart Link
- Full Stream Surveys Data: Stream Surveys Link
- Construction Photos: Photos Link Note: Opens as web page. Click Browse Menu and select Full Screen. Then use mouse to navigate through photos.
- Ohiopyle State Park Map: Map Link
- Ohiopyle State Park Recreational Guide: Guide Link