

Lower Cheat Watershed Passive Treatment Installation (FY 08)

Projects:  
Dinkenberger Road Phase II

Final Report

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## Dinkenberger Road Project

Phase I of this project was completed in 2003, and consists of a limestone leach bed and open limestone channels. The AMD was collected in a pool at the mouth of the portal (this pool was pre-existing, but was upgraded by adding a small dike to the downstream side). Water from the pool discharged into a limestone leachbed along a bench approximately 20 feet above Dinkenberger Rd. Discharge from the leach bed flowed down a limestone rip-rapped channel and through a culvert under Dinkenberger Rd. A small limestone splash basin at the culvert exit diffused the erosive force of the flow and helped redirect the water into an 860-foot open limestone channel. This channel ran parallel to Dinkenberger Rd. and discharged into a small stream just before its confluence with the North Fork of Greens Run. The limestone leach bed and the open limestone channel in this passive treatment system achieved some acid reduction for several months after installation. The leachbed was treating approximately 6.8 tons of acid load per year while the open limestone channel treated approximately 9.5 tons per year. The limestone leach bed and the open limestone channel were removing 20% and 28% of the acid load respectively. In 2005, a major storm caused a large amount of organic debris to fall into the leachbed. In turn, this caused plugging of the leachbed and the mine water began to bypass this part of the treatment system. In 2006, the leachbed was wrapped with a fabric cover to prevent further clogging. Since 2006, the water chemistry at the Dinkenberger site has improved over the pre-construction chemistry. The treatment system is currently reducing 24% of the acidity, 15% of the Fe and 4% of the Al.

Phase II of the Dinkenberger Road project has modified the existing passive treatment system by conveying the water from the enhanced Phase I limestone bed under Dinkenberger Road and through a series of limestone step pools. The water is then conveyed via open limestone channel into the receiving stream.

The goal of Phase II of this project is to remove 80% of the pre-construction acid and metal loads. Table 1 gives pre-construction loads of acidity and metals with estimated reductions from Phase II of the project as well as the overall acid and metal loads from the Cheat River TMDL for the entire Greens Run watershed.

**Table 1. Acid and metal loads related to Phase II of the Dinkenberger Road project.**

	Acid load	Fe load	Al load
	lbs/yr	lbs/yr	lbs/yr
Pre-construction	68,147	2,182	820
Phase II estimated post-construction loads	10,222	437	164
Target loads (all of Greens Run)	Not established	10,594	4,445

The construction of the Phase II Dinkenberger Road project is complete. Post-construction sampling has been completed. Load reductions can be found in Table 2. Figure 1 shows the location of the Dinkenberger Road project site.

Table 2. Pre- and Post-construction acid and metal loads for Phase II of the Dinkenberger Road project.

	Acid load	Fe load	Al load
	lbs/yr	lbs/yr	lbs/yr
Pre-construction	68,147	2,182	820
Post-construction	6	17	10
Percent change	>99%	99%	98.8%

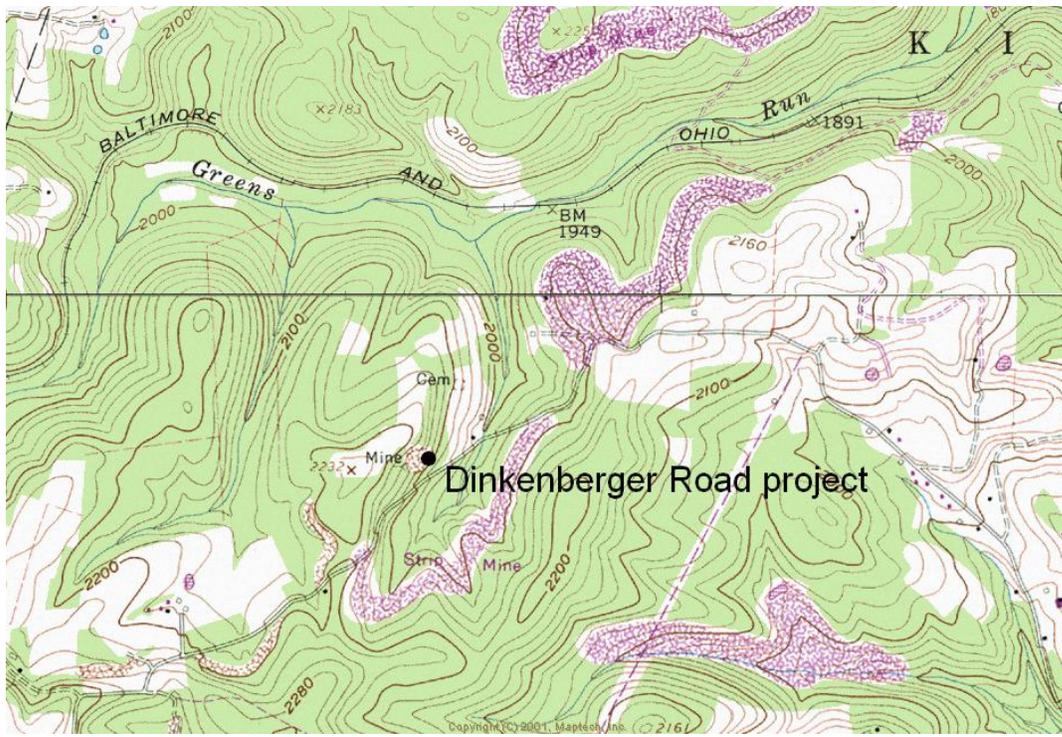


Figure 1. A portion of the Valley Point and Kingwood quadrangles detailing the location of the Dinkenberger Road project site in the Greens Run watershed.

Table 3 details project milestones and the approximate percentage of completion of each milestone.

Table 3. Project milestones and approximate percentage of completion.

Project milestone	Percent completion
Pre-construction sampling	100%
Surveying/Engineering	100%
Permit Application/Approval	100%

Construction	100%
Post-Construction Sampling	100%

Financial Expenditures

Table 4. Financial report for the Dinkenberger Road Phase II project.

Semi-Annual 319 Financial Report			
Project:	Dinkenberger Road Phase II		
NPS #:		Phone:	304-293-7002
Fiscal Year:	2008	Fax:	304-293-7822
E-mail:	<a href="mailto:brady.gutta@mail.wvu.edu">brady.gutta@mail.wvu.edu</a>		
Grantee:	Friends of the Cheat, Inc.		
Contact:	Brady Gutta		
Reporting period: To	10/31/2012 (final report)	05/01/12	From
	319 Grant Funds Awarded:	\$150,000.00	
Items for match			Match \$
Salaries			\$5,272.00
F&A			\$678.00
Fringe Benefits			\$1,292.00
General Expenses			\$214.00
Total funds spent during this reporting period			\$7,456.00
Total funds spent overall			\$102,311.00
<b>Remaining Match Balance</b>			<b>\$3,913.00</b>
Request for reimbursement(s) during period			Spent \$
Salaries			\$4,373.00
F&A			\$544.00
Fringe Benefits			\$1,065.00
Subcontract to Friends of the Cheat			\$110,981.00
General Expenses			\$0.00
Travel			\$0.00
Total for this reporting period			\$116,963.00
Total grant expenditures			\$146,598.00
<b>Remaining 319 Balance</b>			<b>\$3,402.00</b>
<b>Remaining Total Balance</b>			<b>\$7,315.00</b>