AQUATIC RESOURCES MANAGEMENT, LLC

29 December, 2011

United States Army Corps of Engineers
Louisville District
845 Sassafras Creek Road
Sassafras, KY 41759-8806

Re: DNR# 897-0452, LRL-2005-1946-odm

Dear Reviewer,

Please find enclosed one (1) original copy of the Second Year Monitoring report for the Hick's Branch Mitigation site.

Should you require any more information upon your review of this package or require a site visit feel free to contact me at 859-388-9595 or by e-mail at nbaker@aquaticresources.us.

Sincerely,

Nick Baker
Vice President and Environmental Scientist

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YEAR TWO MONITORING REPORT
UNITED STATES CORPS OF ENGINEERS
Hicks Branch Mitigation
KDNR PERMIT NO. 897-0452

BDCC Holding

Company, Inc.

Prepared:
December 29, 2011

Prepared by:
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(859) 388-9595

BDCC Holding Company, Inc. Hick's Branch Mitigation Year Two Monitoring Report

Project Overview

This report is to notify the United States Army Corps of Engineers (USACE) of the completion on two full growing seasons for the BDCC Holding Company, Inc. (BDCC) Hick's Branch Mitigation site. This USACE permit is an Individual Permit associated with BDCC KDSMRE Permit # 897-0452. Aquatic Resources Management is the agent responsible for conducting the monitoring reports on behalf of BDCC. The inspection date of the field visit was conducted on December 22, 2011.

Purpose of the Approved Project

This mitigation project was conducted in order to offset stream impacts associated with BDCC's 897-0452 mining project. Stream impacts occurred from the surface mining method of extraction of coal reserves. Four hollowfills were necessitated by this method to contain all overburden as well as the in-stream ponds to control the sediment runoff. The hollow fills will be permanently impacting approximately 1,742 linear feet of intermittent streams and the in-stream ponds will be temporarily impacting 1,763 linear feet of intermittent streams. The mitigation completed at Hick's branch is used to offset the permanent impacts associated with the mining previously mentioned.

Site Location

Hick's Branch is located 1 mile southwest of the intersection of Highway 7 and Highway 699 in Perry County Kentucky on Hick's Branch Road. The latitude and longitude of the project is 37 ° 07' 32.9" and 83 ° 06' 37.5" respectively. Hick's

Branch is located in the North Fork of the Kentucky River watershed Hydrologic Unit Code (HUC) 05100201.

Mitigation Commencement and Completion Dates

Construction on Hick's Branch started in September of 2008 and was completed in November of 2008.

Performance Standards

After two full growing seasons of construction completion all performance standards are being met with the exception of the riparian width. The restoration activities have decreased the amount of sediment entering the stream from the past impacts, increased bank stability, created macroinvertebrate habitat, as well as achieved vertical and lateral channel stability. Trees were planted in the riparian areas during the 2011 dormant season. However due to a small survival rate, further tree plantings are necessary along the riparian corridor and maintenance on a couple structures is required to achieve full potential of the mitigation reach. These problems will be corrected during the dormant season of 2012. After transplanting trees BDCC will be meeting all of their performance standards. Repair to the mitigation site was conducted in the 2011 year, structures were repaired and appropriate channel dimensions were restored.

Requirements

The requirements as stated in the approved Clean Water Act Section 404 permit are as follows; Mitigation efforts will be implemented by the applicant using their own qualified equipment operators to conduct the mitigation plan under Best Management Practices. The stream morphology will be determined successful when the proposed structures are constructed in the approximate location

proposed in this mitigation plan. Stream stability will be examined for successful erosion controls. The erosion controls will be considered successful if the stream and proposed stream structures are stable laterally and vertically. The limits of the mitigation sites will be delineated and flagged with surveyor's stake to indicate restored reaches.

The vegetation will be maintained at an 80% success rate for native species in the riparian corridors. It is also anticipated that natural succession of native species will occur on-site in the riparian zones. Non-native and invasive species will be kept to a minimum on the project restoration area.

After stream restoration standards have been met for all areas the applicant or consultant will be responsible for conducting annual monitoring reports to inform the Louisville District of the United States Army Corps of Engineers of progress. The applicant is obligated to maintain the project area mitigation by following requirements set forth by DSMRE and USACE. Monitoring and maintenance of the mitigation site will continue until final mitigation approval is achieved.
The compensatory mitigation project site is successfully achieving the standards set forth in the approved USACE permit. The Rapid Bioassessment Protocol demonstrates trends toward the stated mitigation goals in table 1. As stated before, maintenance will be performed on the structures that have been damaged over the past year.

Table 1:

Hick's Branch Mitigation Monitoring						
Main Channel Left Fork of Hicks Branch						
RPB Habitat Parameters	Pre-mitigation	Year One	Year Two	Year Three	Year Four	Predicted Year Five
Epifaunal Substrate	10	11	12			15
Embeddedness	8	12	12			16
Velocity/Depth Regime	5	10	10			10

Sediment Deposition	9	12	12			16
Channel Flow Status	10	10	14			17
Channel Alteration	8	13	12			15
Frequency of Riffles	9	16	16			18
Bank Stability (both)	6	12	12			18
Veg. Protection (both)	12	12	12			18
Riparian Width (both)	12	10	10			14
Total Habitat Score	89	118	122			157

UT to Hick's Branch-1						
RPB Habitat Parameters	Pre-mitigation	Year One	Year Two	Year Three	Year Four	Predicted Year Five
Epifaunal Substrate	3	10	11			15
Embeddedness	3	8	10			17
Velocity/Depth Regime	5	8	10			8
Sediment Deposition	5	12	12			17
Channel Flow Status	5	10	13			15
Channel Alteration	4	10	12			10
Frequency of Riffles	2	14	14			16
Bank Stability (both)	8	12	14			16
Veg. Protection (both)	8	12	14			18
Riparian Width (both)	6	10	10			12
Total Habitat Score	49	106	120			144

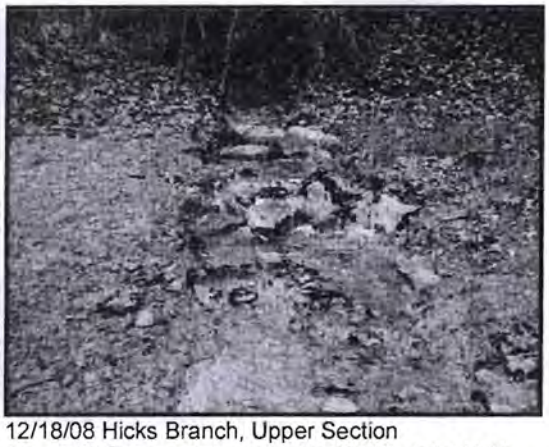
UT to Hick's Branch-2						
RPB Habitat Parameters	Pre-mitigation	Year One	Year Two	Year Three	Year Four	Predicted Year Five
Epifaunal Substrate	8	10	12			15
Embeddedness	8	8	11			16
Velocity/Depth Regime	4	8	10			10
Sediment Deposition	8	12	12			16
Channel Flow Status	8	8	13			17
Channel Alteration	8	14	13			15
Frequency of Riffles	7	14	14			18
Bank Stability (both)	6	12	14			18
Veg. Protection (both)	10	12	14			18
Riparian Width (both)	10	10	12			14
Total Habitat Score	77	108	125			157

Summary Data

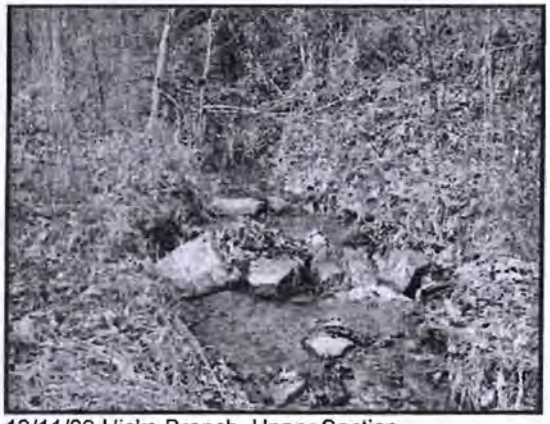
The success of the project is based on the stabilization of the stream, establishment of riparian vegetation as well as the creation of macroinvertebrate habitat. The Pre-mitigation vs. year one and two post mitigation scores are listed in table 1 above. The table shows the general trend toward the stated goals in the compensatory mitigation plan.

The Hick's Branch stream restoration project had various challenges to overcome to ensure its success. First, the entrenched stream bed was causing unstable banks and the introduction of excess sediment. Second, the stream was relocated close to the toe of the mountain or the road by past farming practices. Due to the lay of the land BDCC was able to remedy both of the problems by reshaping the land to reconnect the flood plain as well as restore the proper dimension pattern and profile. Log structures were created within the stream to not only stabilize the stream naturally, but they also create macroinvertebrate habitat. Pictures of the mitigation site illustrating the past and current conditions (figures 1-6), as well as a map showing the locations of the photos (figure 7), and map depicting the site location (figure 8) are included. The only part of the mitigation that is not meeting the stated standards is the riparian survival rate.

Figure 1



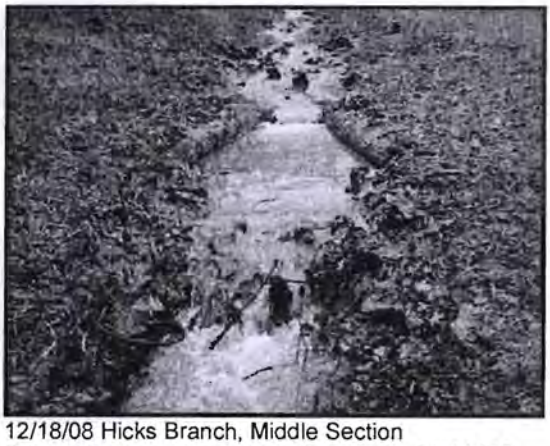
12/18/08 Hicks Branch, Upper Section
Pic. 1393 Facing Upstream, 37.10393, -83.11525



12/11/09 Hicks Branch, Upper Section
Pic. 583 Facing Upstream, 37.10390 -83.11514

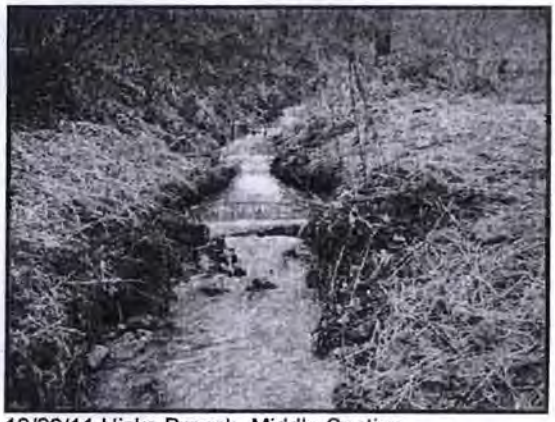
12/22/11 Hicks Branch, Upper Section
Pic. 071 Facing Upstream, 37.10370, -83.11532

Figure 2



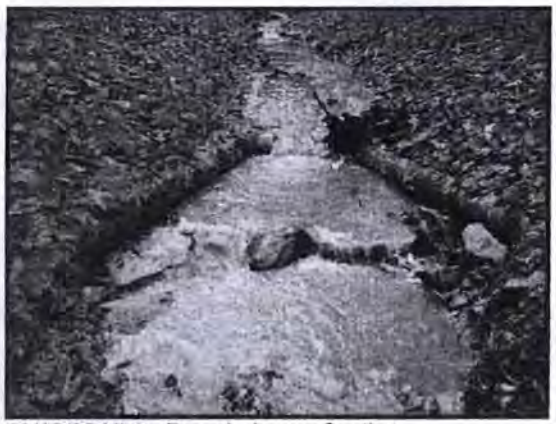
12/18/08 Hicks Branch, Middle Section
Pic. 1402 Facing Upstream, 37.10362, -83.11440

12/11/09 Hicks Branch, Middle Section
Pic. 591 Facing Upstream 37.10362, -83.11440

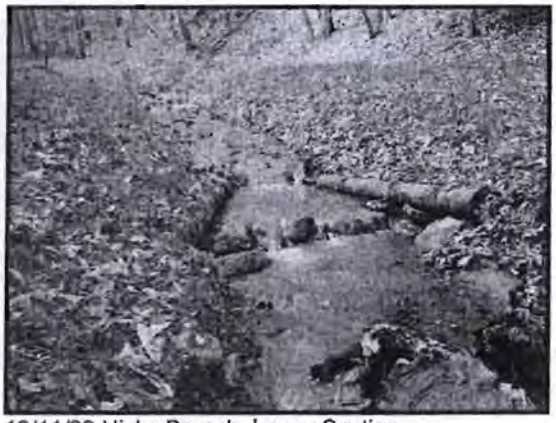


12/22/11 Hicks Branch, Middle Section
Pic. 076 Facing Upstream, 37.10355, -83.11438

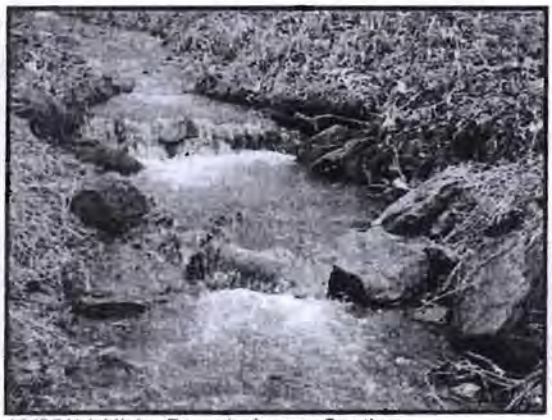
Figure 3



12/18/08 Hicks Branch, Lower Section
Pic. 1416 Facing Upstream, 37.10379, -83.11348

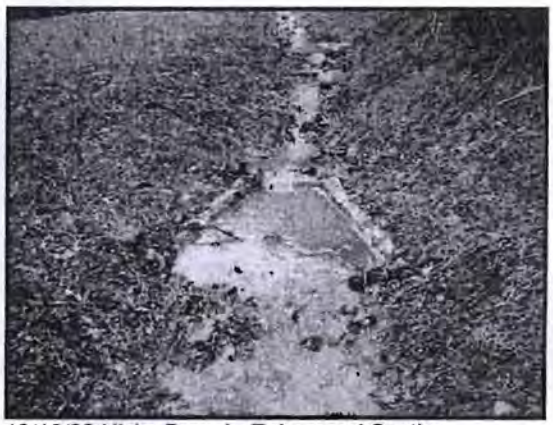


12/11/09 Hicks Branch, Lower Section
Pic. 603 Facing Upstream, 37.10388, -83.11345

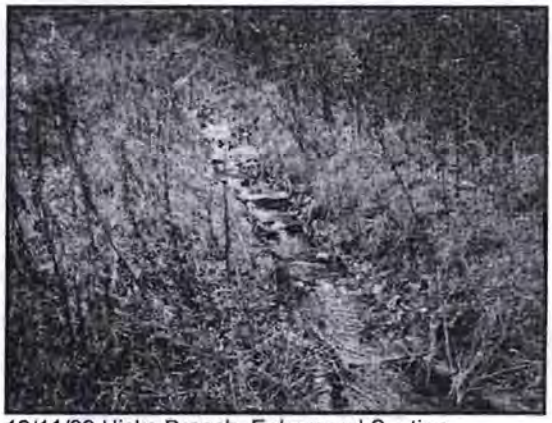


12/22/11 Hicks Branch, Lower Section
Pic. 080 Facing Upstream, 37.10370, -83.11358

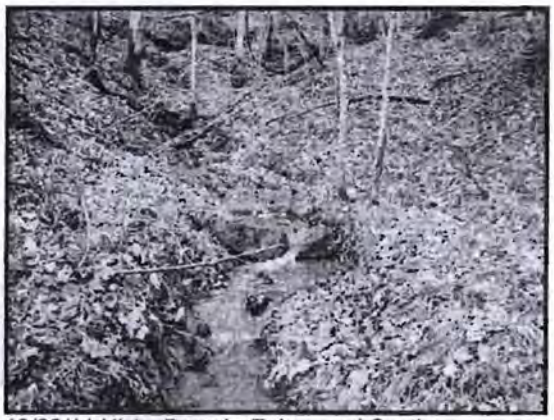
Figure 4



12/18/08 Hicks Branch, Ephemeral Section
Pic. 1445 Facing Upstream, 37.10296, -83.10811

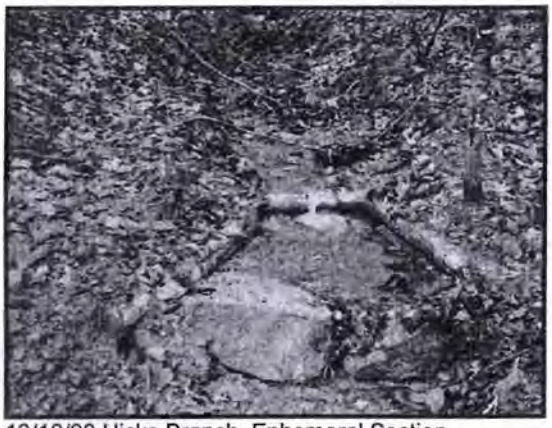


12/11/09 Hicks Branch, Ephemeral Section
Pic. 581 Facing Upstream, 37.10289, -83.10801

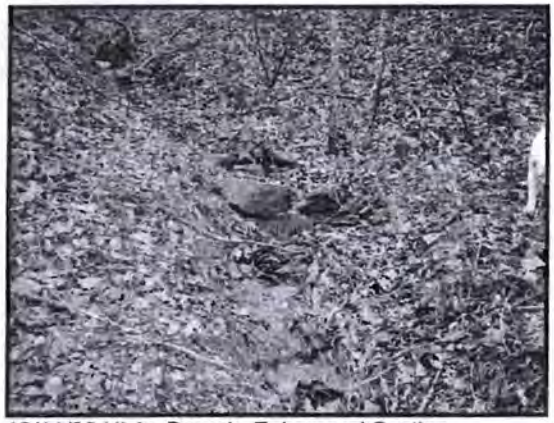


12/22/11 Hicks Branch, Ephemeral Section
Pic. 081 Facing Upstream, 37.10179, -83.10733

Figure 5



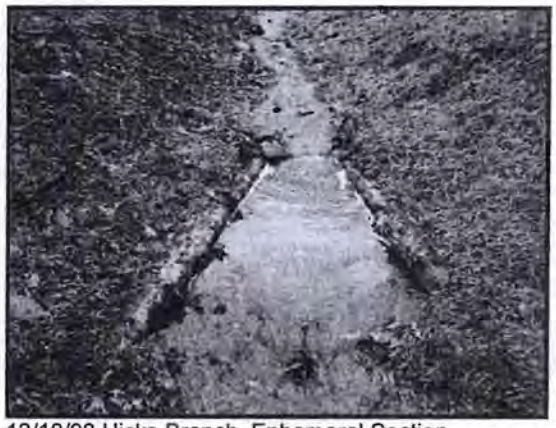
12/18/08 Hicks Branch, Ephemeral Section
Pic. 1426 Facing Upstream, 37.10192,-83.10723



12/11/09 Hicks Branch, Ephemeral Section
Pic. 572 Facing Upstream, 37.10189, -83.10728

12/22/11 Hicks Branch, Ephemeral Section
Pic. 085 Facing Upstream, 37.10226, -83.10789

Figure 6



12/18/08 Hicks Branch, Ephemeral Section,
Pic. 1437 Facing Upstream, 37.10245, 83.10790

12/11/09 Hicks Branch, Ephemeral Section,
Pic. 577 Facing Upstream, 37.10237, 83.10776

12/22/11 Hicks Branch, Ephemeral Section
Pic. 088 Facing Upstream, 37.10255, -83.10811

Conclusions

Hick's Branch mitigation site is meeting all performance standards with the exception of the tree survival rate. BDCC will return to the site and plant more trees and perform the described maintenance during the dormant season of 2012 to restore the riparian area. Once this condition is corrected, the BDCC mitigation site will continue to trend toward the stated mitigation performance standards in the approved Clean Water Act section 404 permit.