AQUATIC RESOURCES MANAGEMENT, LLC

December 19, 2011

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

2003 - 1428

Re: DNR# 813-0359

Dear Reviewer,

Please find enclosed one (1) original copy of the First Year Monitoring report for the Big Caney Creek, Unnamed Tributary Reach 12 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 ONE MONITORING REPORT
UNITED STATES CORPS OF ENGINEERS
Big Caney Creek, Unnamed Tributary Reach 12
KDNR PERMIT NO. 813-0359

Laurel Mountain Resources, LLC.

Prepared:
December 19, 2011

Prepared by:

Aquatic Resources Management

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Laurel Mountain Resources, LLC Big Caney Creek Unnamed Tributary Reach 12 Mitigation Year One Monitoring Report

Project Overview

This report is to notify the United States Army Corps of Engineers (USACE) of the completion of one full growing season for the Laurel Mountain Resources, LLC (LMR) unnamed tributary of Big Caney Creek (Reach 12) mitigation site. This USACE permit (ID # 200301428) is an Individual Permit associated with LMR KDSMRE Permit # 813-0359 (previously 813-0309). Aquatic Resources Management is the agent responsible for conducting the monitoring reports on behalf of LMR. The inspection date of the field visit was conducted on 10 November 2011.

Purpose of the Approved Project

This mitigation project was conducted in order to offset stream impacts associated with LMR's 813-0359 mining project. Stream impacts occurred from the surface mining method of extraction of coal reserves. Four hollow fills at this project were necessitated to contain the overburden associated with the mining methods. Restoration performed at Reach 12 partially mitigates losses of 2,603 linear feet associated with the hollow fill construction. The mitigation provided for the associated impacts to this permitting action equates to 2,680 linear feet of intermittent stream mitigation and 200 linear feet of ephemeral stream mitigation. Total length of off-site stream mitigation of Reach 12 is 2,880 linear feet.

Site Location

Unnamed tributary to Big Caney Creek Reach 12 is located approximately 1.5 miles east of the intersection of Highway 30 and Highway 542 in Breathitt County Kentucky. The latitude and longitude of the project is 37° 34' 56.78"and -83° 9' 49.96" respectively. Reach 12 is located on Big Caney Creek of Quicksand Creek in the North Fork of the Kentucky River watershed, Hydrologic Unit Code (HUC) 05100201.

Mitigation Commencement and Completion Dates

Construction on Reach 12 was started in the fall of 2010 and was completed in the winter of 2010.

Performance Standards

After one full growing season of construction completion all performance standards are being met. The restoration activities have decreased the amount of sediment entering the stream from the past impacts, improved bank stability, created macroinvertebrate habitat, as well as achieved vertical and lateral channel stability. Further tree plantings are necessary along the riparian corridor to achieve full potential within the mitigation reach. These problems will be corrected in 2011. After transplanting trees, LMR will be meeting all of their performance standards.

Requirements

The requirements as stated in the approved Clean Water Act Section 404 permit are as follows; Mitigation efforts were 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 less than 20% overall 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. As stated, the aforementioned tree plantings will be performed by LMR to meet performance standards. The Rapid Bioassessment Protocol demonstrates trends toward the stated mitigation goals in table 1.

Table 1.

Unnamed Tributary of Big Caney Creek Reach 12 Mitigation Monitoring						
Reach 12 Segment 1 - Intermittent						
RPB Habitat Parameters	Pre-mitigation	Year One	Year Two	Year Three	Year Four	Predicted Five Year
Epifaunal Substrate	5	13				12
Embeddedness	6	12				12
Velocity/Depth Regime	9	10				11
Sediment Deposition	5	12				14
Channel Flow Status	9	15				12
Channel Alteration	7	13				14
Frequency of Riffles	10	14				13
Bank Stability (both)	4	14				14
Veg. Protection (both)	6	14				14
Riparian Width (both)	16	14				18
Total Habitat Score	77	131				134
Reach 12 Segment 2 - Intermittent						
RPB Habitat Parameters	Pre-mitigation	Year One	Year Two	Year Three	Year Four	Predicted Five Year
Epifaunal Substrate	6	13				12
Embeddedness	7	12				12
Velocity/Depth Regime	6	10				11
Sediment Deposition	8	12				14
Channel Flow Status	5	15				12
Channel Alteration	7	13				14
Frequency of Riffles	9	14				13
Bank Stability (both)	8	14				14
Veg. Protection (both)	10	14				14
Riparian Width (both)	15	14				17
Total Habitat Score	81	131				133
Reach 12 Segment 3 - Ephemeral						
RPB Habitat Parameters	Pre-mitigation	Year One	Year Two	Year Three	Year Four	Predicted Year Five
Epifaunal Substrate	8	13				13
Embeddedness	4	12				13

Velocity/Depth Regime	6	10				11
Sediment Deposition	3	12				14
Channel Flow Status	6	15				12
Channel Alteration	10	13				14
Frequency of Riffles	10	14				13
Bank Stability (both)	8	14				14
Veg. Protection (both)	6	14				14
Riparian Width (both)	18	14				18
Total Habitat Score	79	131				136

Summary Data

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

Reach 12 restoration project had various challenges to overcome to ensure its success. The entrenched stream bed was causing unstable banks and the introduction of excess sediment. LMR was able to remedy impacts by dredging, re-grading, planting native riparian species, and improving habitat to a minimum width of 50 feet beyond stream banks to create a continuous corridor along the channel. Rock and log cross vanes were installed at designed intervals within each segment to increase sediment transport and create macroinvertebrate habitat.

Pictures of the mitigation site illustrating the current condition (figures 1-6), as well as the map showing the locations of the photos (figure 7), and site location map (figure 8) are included. Mitigation that is not meeting the stated standards is the riparian survival rate, damaged stream enhancement structures, and eroding banks as aforementioned.

Figure 1. Reach 12 Unnamed Tributary 11/10/11
Pic. 762 Facing Upstream, 37.58214, -83.16319

Figure 2. Reach 12 Unnamed Tributary 11/10/11
Pic. 761 Facing Upstream, 37.58189, -83.16234

Figure 3. Reach 12 Unnamed Tributary 11/10/11
Pic. 759 Facing Upstream, 37.58187, -83.16207

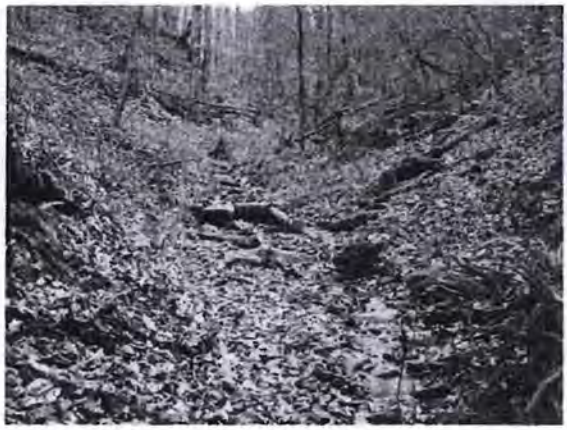

Figure 4. Reach 12 Unnamed Tributary 11/10/11
Pic. 757 Facing Upstream, 37.58153, -83.16145

Figure 5. Reach 12 Unnamed Tributary 11/10/11
Pic. 756 Facing Upstream, 37.58152, -83.16144

Figure 6. Reach 12 Unnamed Tributary 11/10/11
Pic. 755 Facing Upstream, 37.58137, -83.16114

Conclusions

The Reach 12 unnamed tributary site is meeting all performance standards with the exception of tree survival rate. LMR will return to the site and transplant more trees and perform necessary maintenance during the dormant season of this year. Once these conditions are corrected the LMR Reach 12 mitigation site will continue to trend toward the stated mitigation performance standards stated in the approved Clean Water Act Section 404 permit.