AQUATIC RESOURCES MANAGEMENT, LLC

December 19, 2011

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

Re: DNR# 813-0360

2006-368

Dear Reviewer,

Please find enclosed one (1) original copy of the First Year Monitoring report for the Big Caney Creek Unnamed Tributary Reach 07 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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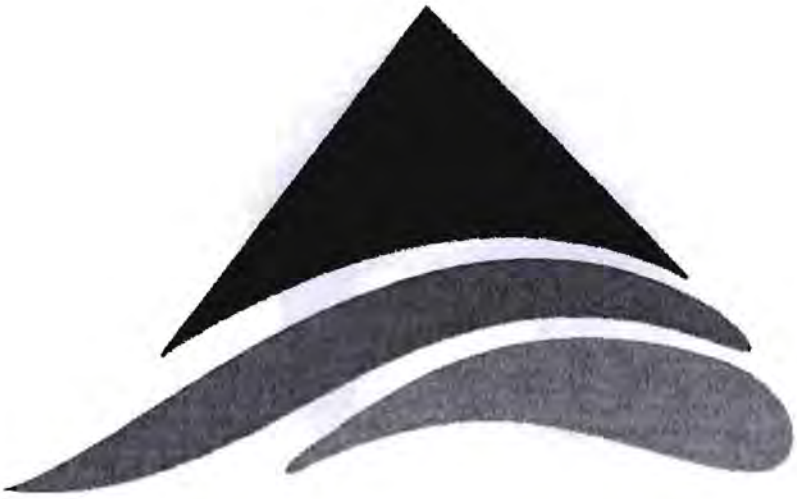
YEAR ONE MONITORING REPORT
UNITED STATES CORPS OF ENGINEERS
Big Caney Creek Unnamed Tributary Reach 07
KDNR PERMIT NO. 813-0360



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 07 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 07) mitigation site. This USACE permit (ID # 200600368) is an Individual Permit associated with LMR KDSMRE Permit # 813-0360 (previously 813-0310). 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 813-0360 mining project. Stream impacts occurred from the surface mining method of extraction of coal reserves. Four sediment structures were necessitated at this project to control sediment runoff from the associated mining impacts. Restoration performed at Reach 07 partially mitigates losses of 1,723 linear feet associated with impacts from the structures. The mitigation provided for the associated impacts to this permitting action equates to 1,795 linear feet of intermittent stream mitigation and 2,020 linear feet of perennial stream mitigation. Total length of off-site stream mitigation is 3,815 linear feet.

Site Location

Unnamed tributary Reach 07 is located approximately 2.5 miles east of Highway 30 in Breathitt County Kentucky. The latitude and longitude of the project is 37° 35' 48.3" and -83° 8' 5.31"respectively. Reach 07 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 07 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 and maintenance is required along eroding banks to achieve full potential of the mitigation reach. These problems will be corrected during the dormant season of 2012. After transplanting trees and completing the described maintenance, 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 and maintenance 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.

Reach 07 Unnamed Tributary of Big Caney Creek Mitigation Monitoring						
Reach 07 Segment 1 - Intermittent						
RPB Habitat Parameters	Pre-mitigation	Year One	Year Two	Year Three	Year Four	Predicted Five Year
Epifaunal Substrate	12	15				12

Embeddedness	6	14				10
Velocity/Depth Regime	6	10				11
Sediment Deposition	10	14				10
Channel Flow Status	6	15				12
Channel Alteration	18	15				18
Frequency of Riffles	11	14				11
Bank Stability (both)	10	12				12
Veg. Protection (both)	16	14				16
Riparian Width (both)	18	14				18
Total Habitat Score	113	137				130

Reach 07 Segment 2 - Intermittent						
RPB Habitat Parameters	Pre-mitigation	Year One	Year Two	Year Three	Year Four	Predicted Five Year
Epifaunal Substrate	13	15				13
Embeddedness	10	14				10
Velocity/Depth Regime	6	10				11
Sediment Deposition	10	14				10
Channel Flow Status	6	15				12
Channel Alteration	20	15				20
Frequency of Riffles	10	14				11
Bank Stability (both)	14	12				14
Veg. Protection (both)	16	14				16
Riparian Width (both)	20	14				20
Total Habitat Score	125	137				137

Reach 07 Segment 3 - Intermittent						
RPB Habitat Parameters	Pre-mitigation	Year One	Year Two	Year Three	Year Four	Predicted Year Five
Epifaunal Substrate	6	15				11
Embeddedness	10	14				10
Velocity/Depth Regime	10	10				11
Sediment Deposition	10	14				10
Channel Flow Status	10	15				12
Channel Alteration	20	15				20
Frequency of Riffles	13	14				13
Bank Stability (both)	16	12				16

Veg. Protection (both)	14	14				14
Riparian Width (both)	20	14				20
Total Habitat Score	129	137				137

Reach 07 Segment 4 - Intermittent						
RPB Habitat Parameters	Pre-mitigation	Year One	Year Two	Year Three	Year Four	Predicted Year Five
Epifaunal Substrate	11	15				12
Embeddedness	7	14				10
Velocity/Depth Regime	11	10				12
Sediment Deposition	6	14				10
Channel Flow Status	12	15				12
Channel Alteration	20	15				20
Frequency of Riffles	15	14				15
Bank Stability (both)	16	12				16
Veg. Protection (both)	16	14				16
Riparian Width (both)	20	14				20
Total Habitat Score	134	137				143

Reach 07 Segment 5 - Perennial						
RPB Habitat Parameters	Pre-mitigation	Year One	Year Two	Year Three	Year Four	Predicted Year Five
Epifaunal Substrate	11	15				12
Embeddedness	6	14				10
Velocity/Depth Regime	14	10				14
Sediment Deposition	6	14				10
Channel Flow Status	14	15				14
Channel Alteration	10	15				12
Frequency of Riffles	14	14				14
Bank Stability (both)	8	12				12
Veg. Protection (both)	14	14				14
Riparian Width (both)	15	14				15
Total Habitat Score	112	137				127

Reach 07 Segment 6 - Perennial						
RPB Habitat Parameters	Pre-mitigation	Year One	Year Two	Year Three	Year Four	Predicted Year Five

Epifaunal Substrate	14	15				14
Embeddedness	6	14				10
Velocity/Depth Regime	13	10				14
Sediment Deposition	6	14				10
Channel Flow Status	12	15				13
Channel Alteration	10	15				12
Frequency of Riffles	14	14				15
Bank Stability (both)	8	12				12
Veg. Protection (both)	18	14				18
Riparian Width (both)	20	14				20
Total Habitat Score	121	137				138
Reach 07 Segment 7 - Perennial						
RPB Habitat Parameters	Pre-mitigation	Year One	Year Two	Year Three	Year Four	Predicted Year Five
Epifaunal Substrate	14	15				14
Embeddedness	6	14				10
Velocity/Depth Regime	13	10				14
Sediment Deposition	6	14				10
Channel Flow Status	8	15				13
Channel Alteration	15	15				15
Frequency of Riffles	15	14				15
Bank Stability (both)	11	12				12
Veg. Protection (both)	14	14				14
Riparian Width (both)	15	14				15
Total Habitat Score	117	137				132

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.

The Big Caney Reach 07 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 constructing the designed pattern and profile, 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 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 are included (figure 8). The only part of the mitigation that is not meeting the stated standards is the riparian survival rate as aforementioned.

Figure 1. Reach 07 Unnamed Tributary 11/10/11
Pic. 840 Facing Upstream 37.59675, -83.13481

Figure 2. Reach 07 Unnamed Tributary 11/10/11
Pic. 837 Facing Upstream, 37.59725, -83.13599

Figure 3. Reach 07 Unnamed Tributary 11/10/11
Pic. 836 Facing Upstream, 37.59725, -83.13606

Figure 4. Reach 07 Unnamed Tributary 11/10/11
Pic. 833 Facing Upstream, 37.59836, -83.13717

Figure 5. Reach 07 Unnamed Tributary 11/10/11
Pic. 830 Facing Upstream, 37.59945, -83.13846

Figure 6. Reach 07 Unnamed Tributary 11/10/11
Pic. 828 Facing Upstream, 37.60057, -83.13917

Conclusions

The Big Caney Reach 07 mitigation site is meeting all performance standards with the exception of tree survival rate and aforementioned bank erosion. LMR will return to the site and transplant more trees and perform necessary maintenance during the dormant season of 2012. Once this condition is corrected the LMR mitigation site will continue to trend toward the stated mitigation performance standards in the approved Clean Water Act Section 404 permit.