

**FINDING OF NO SIGNIFICANT IMPACT
AND ADOPTION OF THE ENVIRONMENTAL ASSESSMENT
PREPARED BY THE UNITED STATES ARMY CORPS OF ENGINEERS**

**TENNESSEE VALLEY AUTHORITY
PROPOSED CONSTRUCTION OF BARGE LOAD-OUT FACILITIES, BARGE FLEETING AND
DEPOSIT OF FILL MATERIAL ASSOCIATED WITH A LIMESTONE QUARRY AT
TENNESSEE RIVER MILE 19.5, RIGHT BANK
LIVINGSTON COUNTY, KENTUCKY**

CALX Resources Inc. (CALX) proposes to construct a crushed limestone loading facility for use with a proposed limestone quarry at Tennessee River Mile 19.5 in Livingston County, Kentucky (see Attachment 1). To transport bulk quantities of limestone by barge, the applicant proposes to construct two separate loading facilities (a fixed conveyor load-out facility and a truck load-out facility) and as many as eight mooring cells and/or dolphins. The applicant also proposes to establish a fleeting area to accommodate 24 barges (i.e., four rows of six barges each). These proposed terminal facilities require permits from the United States Army Corps of Engineers (USACE), pursuant to Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act, as well as approval from the Tennessee Valley Authority (TVA) under Section 26a of the TVA Act.

The applicant's proposed quarry operations would affect approximately 13.01 acres of jurisdictional wetlands. Likewise, construction of the proposed facilities would result in the loss of 20 stream segments totaling approximately 5,977 linear feet of poor-quality intermittent streams. In accordance with the January 4, 2011, *Stream and Wetland Mitigation Plan for CALX Resources Chaudet Creek Quarry* submitted by the applicant to USACE and the Kentucky Division of Water, CALX would rehabilitate 16 stream reaches containing 9,981 linear feet of intermittent stream and two streams containing 578 feet of ephemeral stream. CALX would also create two new streams consisting of approximately 750 feet of intermittent stream and 750 feet of ephemeral stream. CALX proposes to mitigate wetland impacts by in-kind wetland restoration and enhancement of 30.015 acres at 10 on-site areas. USACE permits are required for this activity; however, no TVA Section 26a approval is necessary.

Additionally, CALX proposes to construct inland linear transportation crossings consisting of bridges and culverts. These crossings are subject to USACE Nationwide Permit #14. There are three crossings over permanent streams. These include a crossing of Chaudet Creek to provide vehicular access to the barge terminal, a crossing of Youngblood Creek to access an overburden stockpile area, and a crossing for an unnamed stream near the entrance to the property. These crossings are subject to TVA Section 26a approval.

Alternatives

USACE issued a final environmental assessment (EA) of the proposed action on January 21, 2011. TVA has independently reviewed the document, which is incorporated by reference, and is adopting the USACE EA. The following feasible alternatives were considered in the USACE EA:

- *The No Action* - USACE would not issue the requested permits, and TVA would not approve the applicant's request.
- *The Proposed Action* - USACE would issue the requested permits, and TVA would issue the requested approvals under Section 26a of the TVA Act. Consequently, the applicant, CALX, would construct the terminal as proposed.
- *The Proposed Action With Special Conditions* - USACE and TVA would issue the requested permits and approvals but would condition these upon the implementation of certain measures (listed in the Mitigation section below) to reduce the potential for adverse environmental effects. Subsequently, CALX would construct and operate the terminal in accordance with these stipulations. Many of the special conditions are standard conditions for TVA approvals.
- *The Alternative Action* - USACE and TVA would issue the requested permits and approvals as they would under the Proposed Action With Special Conditions Alternative. The applicant has reconfigured the layout of the quarry to reduce adverse impacts to waters of the United States (U.S.). Under this alternative, approximately 329 acres of the 511-acre site would be affected, while about 182 acres would be undisturbed.

Impacts Assessment

Under the No Action Alternative, USACE would not issue the requested permits, and TVA would not approve the applicant's request. Consequently, the permanent fill of over 13 acres of jurisdictional wetlands as well as the loss of approximately 5,977 feet of intermittent streams from quarry operations would not occur. Under the No Action Alternative, the proposed barge load-out facility and fleeting area would not be constructed.

As stated in the EA, USACE determined that adoption of any of the Action Alternatives would have either no effect or minimal effects to the following environmental resources: flood control functions; storm, wave, and erosion buffers; base flow; existing and potential water supplies; water conservation; energy consumption or generation; conservation; food and fiber production; and floodplain values.

Likewise, USACE determined that there would be insignificant effects to the following resources under the Action Alternatives: substrate; currents, circulation, or drainage patterns; suspended particulates and turbidity; water quality (temperature, color, odor, nutrients, etc.); shore erosion and accretion patterns; special aquatic sites (wetlands, mudflats, pool and riffle areas, vegetated shallows, sanctuaries, and refuges); habitat for fish and other aquatic organisms; wildlife habitat; biological availability of possible contaminants in dredged or fill material; water-related recreation; aesthetics; traffic/transportation patterns; navigation; safety; air quality; noise; cultural values; land use classification; economics; mineral needs; and consideration of private property. Potential effects to endangered and threatened species and cultural resources are described in more detail below.

Threatened and Endangered Species

Five endangered aquatic mussel species, i.e., the fanshell (*Cyprogenia stegaria*), fat pocketbook (*Potamilus capax*), orangefoot pimpleback (*Plethobasus cooperianus*), pink mucket (*Lampsilis abrupta*), and ring pink (*Obovaria retusa*) and two candidate mussel species—the sheepnose (*Plethobasus cyphus*) and spectaclecase (*Cumberlandia monodonta*)—are known

to occur within the project action area.¹ A mussel survey conducted in 2008 confirmed the presence of federally listed mussels in the immediate area of the proposed barge terminal site. Additionally, four endangered terrestrial species, i.e., the interior least tern (*Sterna antillarum athalassos*), Indiana bat (*Myotis sodalis*), gray bat (*Myotis grisescens*), and Price's potato bean (*Apios priceana*), have the potential to occur within the project area.

The applicant's contractor, Ecological Services LLC, conducted a bat survey during the summer of 2008 to determine if proposed activities would likely adversely affect the federally listed as endangered Indiana bat or gray bat. The survey indicated that the proposed activity is unlikely to adversely affect these bat species.

The United States Fish and Wildlife Service (USFWS) stated that the proposed project would not likely adversely affect the interior least tern, Indiana bat, or the gray bat. However, USFWS requested a survey for Price's potato bean. In a June 15, 2010, letter, USFWS stated that formal consultation under Section 7 of the Endangered Species Act (ESA) was to commence regarding potential effects to the fanshell, fat pocketbook, orangefoot pimpleback, pink mucket, and ring pink. However, USFWS determined that the fanshell and ring pink are not likely to be adversely affected and there would be no need to address these two species in its biological opinion (BO).

Formal consultation under Section 7 of the ESA was initiated on October 19, 2010, and USFWS issued the BO on November 17, 2010. In that document, USFWS determined that 7.5 acres of habitat could be taken as a result of the applicant's proposed action. This acreage includes 0.15 acre from the construction of mooring cells and dolphins and 7.35 acres from indirect impacts, including project operation, potential long-term sedimentation, and habitat disturbance. USFWS expected that no fat pocketbook mussels will be taken as a result of the proposed action. However, USFWS stated that 33 pink mucket and 65 orangefoot pimpleback mussels will be taken by the proposed action. USFWS determined that this level of expected take is not likely to result in jeopardy to the species or adverse modification of critical habitat. USFWS stipulated the following reasonable and prudent measures to minimize take of pink mucket and orangefoot pimpleback mussels:

1. USACE and TVA must ensure that the proposed action will occur as designed, planned, and documented in the biological assessment (BA), all supporting information provided by CALX, and the BO.
2. USACE and TVA must ensure that CALX has a plan to replace pink muckets and orangefoot pimplebacks likely to be taken by the proposed action.
3. USACE and TVA must ensure that CALX implements measures to minimize or eliminate impacts of the project to pink muckets and orangefoot pimplebacks.

USFWS issued an incidental take statement, pursuant to Section 9 of the ESA, provided USACE implements several nondiscretionary conditions in any permit issued to CALX. These measures are listed as items 16 through 16.6 in the Mitigation section below.

¹ In the biological opinion, the "project action area" was considered to include the tailwater of Kentucky Dam (i.e., that reach of the Tennessee River immediately downstream of Kentucky Dam to the confluence of the Tennessee River and the Ohio River) as well as an approximate 38-mile downstream reach of the Ohio River to Mile 973 near Mound City, Illinois.

A survey for Price's potato bean was conducted between August 6 and 9, 2010. No occurrences of this plant were noted. Thus, Price's potato bean would not be affected by the proposed gravel quarry operations.

Cultural Resources

A Phase I archaeological survey was conducted on approximately 500 acres of the proposed quarry site. Six previously unrecorded archaeological sites, one nonsite locality, and four isolated finds were identified. Three sites were considered potentially eligible for inclusion in the National Register of Historic Places (NRHP), and further investigation was recommended because these sites were located within the proposed quarry. A Phase II survey indicated that these three sites were ineligible for inclusion in the NRHP. In a May 6, 2010, letter, the Kentucky State Historic Preservation Officer (SHPO) concurred with this determination.

Fourteen structures were photo documented. Following a survey of the on-site 1860 Devine house and farm, the SHPO stated that quarry operations would have an adverse effect on the house (originally, a log structure) and a barn. Consequently, a memorandum of agreement (MOA) was developed between the SHPO, USACE, TVA, and CALX stating that further archaeological surveys or testing would be conducted on these structures prior to work on the quarry. The MOA also stipulated that additional archaeological survey and testing would be conducted on the project area adjacent to the truck load-out area and the proposed fleeting area. All parties to the MOA would confirm the archaeological surveys and testing before the structures were dismantled or moved. The MOA stipulations are summarized under item 14 in the Mitigation section below.

Cumulative Effects

The siting and operation of the proposed rock quarry, load-out facility, and barge fleeting area would permanently impact the site. Thus, these proposed actions would likely cause the following cumulative and secondary effects to the existing environment. However, none of these effects are expected to be significant.

- An increase in the number of terminal facilities in the area
- An expansion of the rock quarry onto adjacent properties
- An expansion of the local economy.

Public and Intergovernmental Review

The applicant's proposed action was publicized in Joint Public Notice No. 09-83 issued by USACE on December 11, 2009. Because mention of potential stream impacts was omitted in the public notice, an amended public notice (09-83A) was issued on February 4, 2010, to advertise the revised scope of work.

Mitigation

USACE imposed general and special conditions on its permit. The following special conditions would reduce the potential for adverse environmental effects. USACE is also referred to as "the Corps" in the following special conditions, which are numbered as they appear in the USACE permit.

9. Should any portion of the constructed stream or wetland mitigation areas result in an unsuccessful attempt, the applicant shall refer to the itemized Contingency Plan within the submitted Stream and Wetland Mitigation Plan.
13. The permittee shall mitigate as described in the MOA the adverse effects of the proposed quarry on the historic structures located on the Devine property in Livingston

County, Kentucky. Before any work on the quarry commences and prior to removal by the permittee of Site LV-40 (house) and LV-40-001(barn), both structures would be documented utilizing state equivalent HABS²-level documentation. Additional archaeological testing/survey shall be performed according to the MOA. No work shall commence until the USACE and SHPO have reviewed and commented on the archaeological testing/survey reports. All documentation shall be carried out by professionals meeting the Secretary of the Interior's professional qualification standard.

14. The final Compensatory Mitigation Plan (CMP), with revision date January 4, 2011, shall be fully implemented to compensate for losses to wetlands and streams on the project site. To compensate for the impacts to approximately 5,977 linear feet of intermittent stream, approximately 9,981 linear feet of intermittent stream and 578 linear feet of ephemeral stream shall be enhanced according to the CMP. In addition to the restoration of existing streams, 750 linear feet of ephemeral stream and 750 linear feet of intermittent stream shall be created according to the CMP. Additionally, approximately 30 acres of wetlands will be reestablished through restoration and enhancement in 10 areas. The following subconditions (14.1 through 14.6) provide specific detail concerning particular elements of the CMP.
 - 14.1. CALX shall implement the mitigation work plan and complete the initial construction and plantings in accordance with the time frames specified in the above-referenced CMP. Completion of all elements of this CMP is a requirement of this authorization.
 - 14.2. The created and restored stream channel segments have been designed and shall be constructed using natural stream design techniques to reestablish the appropriate hydrogeomorphic configuration. Where feasible, in-stream structures and habitat features such as bank boulders, boulder clusters, root wads, and large woody debris shall be installed to enhance aquatic habitat to reach the predicted Habitat Integrity values.
 - 14.3. CALX shall incorporate in-stream enhancement measures such as riffle/pool complexes, eddy rocks, aquatic habitat structures, and meanders within the reconstructed/restored, enhanced, and established stream channels to provide habitat for aquatic diversity. All restored/reconstructed and established streams must be designed in a manner that would not eliminate partial canopy closure over the established channels.
 - 14.4. Implementation of the CMP must ensure the created and restored stream segments totaling 10,731 linear feet provide sufficient stability and habitat for aquatic diversity. Physical habitat and benthic communities shall be assessed in the created and restored mitigation stream segments, to the extent practicable. If the mitigation efforts do not meet the performance standards outlined in the CMP and special conditions of this Individual Permit authorization, corrective measures and/or additional mitigation shall be required. Remedial actions taken during the monitoring period shall be described. These actions may include, but are not limited to, removing debris, replanting, controlling invasive species, regrading the site, applying additional

² HABS refers to the Historic American Building Survey, a program administered by the National Park Service to document historic buildings and archive information about these structures.

topsoil or soil amendments, adjusting site hydrology, etc. Remedial measures may be necessary to achieve or maintain achievement of the success criteria and otherwise improve the extent to which the mitigation site(s) replace the functions and values lost due to project impacts. If performance standards are not met at the end of the five-year monitoring period, the applicant shall prepare an analysis of the cause(s) of failure, if determined necessary by the Corps, and propose remedial actions for approval, which could include payment of an in-lieu fee. Performance standards for each stream reach is identified in the expected Habitat Integrity Scores after five years in Table 6 of the CMP; USACE # 2009-01103.

- 14.5. The mitigation values predicted for five years after restoration in Table 7 of the CMP would be used to assess success of mitigation sites as submitted by CALX. Contingency procedures described in the mitigation plan would be implemented in the event success criteria are not met.
- 14.6. CALX shall be responsible for maintaining all on-site mitigation and restoration areas until such time as the permittee provides documentation to, and receives verification from, the USACE, that areas within the mitigation area shall meet the following conditions:
 - a. Constructed or restored waters have a continuous ordinary high water mark and are connected to a surface water tributary system of waters of the United States
 - b. The established or restored streams are functioning as the intended type and at the level of ecological performance prescribed in the CMP
 - c. Buffer and riparian zones and other areas integral to the enhancement of the aquatic ecosystem are functioning as the intended type of ecosystem component and at the level of ecological performance prescribed in the CMP
 - d. Water must flow above ground when present in the restored and created stream channels that are proposed to be intermittent streams in the CMP
15. The permittee must provide annual monitoring and assessment reports to the USACE, Nashville District, for a minimum of five years after the completion of the mitigation work to ensure that proper hydrologic conditions and sufficient vegetation have been established. The initial monitoring report shall be provided by December 31 of the year in which the mitigation work is completed. The report shall follow the format for mitigation monitoring as outlined in Regulatory Guidance Letter 08-03.
16. The USFWS BO contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with “incidental take” of no fat pocketbook mussels, no more than 33 pink mucket mussels, and no more than 65 orangefoot pimpleback mussels, or no more than 7.5 acres of suitable mussel habitat within the action area will be incidentally taken. The reasonable and prudent measures, below, with their implementing terms and conditions are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and

review of the reasonable and prudent measures provided. Permittee will notify the Corps and immediately provide an explanation of the causes of the taking and review with USFWS the need for possible modification of the reasonable and prudent measures. The permittee's authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the BO, which terms and conditions are incorporated by reference in this permit, and listed below. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute noncompliance with your USACE permit. USFWS is the appropriate authority to determine compliance with the terms and conditions of its BO and with the ESA.

- 16.1. CALX must agree to implement the proposed action as described in the BA, including mussel conservation measures listed in this BO that are referred to in the BA, the BA's supporting documentation, and the BO.
- 16.2. CALX shall develop a Mussel Relocation Plan and obtain the USFWS's prior written approval of the plan, prior to relocating pink mucket, orangefoot pimpleback, and other mussel species, before any new construction activity occurs at or below the ordinary high water level. This plan will include a mussel relocation effort from within an area approximately 0.15 acre in size at the project site. It is not expected that all mussels in the entire area will likely be relocated; however, USFWS believes that if approximately 75 percent of mussels in this area are relocated, that will be an adequate level of relocation effort. This effort should be targeted at the two federally listed species addressed in the BO and other species that are similar in appearance to the federally listed species. This Mussel Relocation Plan will also include a baseline 'monitoring' component. Future monitoring efforts are addressed in Terms and Conditions #3 [item 16.3] below. All federally listed mussels will be tagged and either relocated to a nearby area of suitable habitat that is protected from navigation and fleeting activity, as indicated in the Mussel Relocation Plan, or as directed by USFWS to the Kentucky Department of Fish and Wildlife Resources (KDFWR) to be used in propagation and culture activities at the KDFWR Center for Mollusk Conservation in Frankfort, Kentucky.
- 16.3. CALX shall provide a plan for monitoring the mussel removal site, and the site relocated mussels will be placed. The plan will be provided to USFWS and approved by USFWS prior to implementation and prior to any construction of mooring cells and/or dolphins. Monitoring will be done two years and five years after the baseline monitoring described in Terms and Condition #1 [item 16.1 above] is completed.
- 16.4. CALX shall contribute a total of \$45,315 to the Kentucky Waterways Alliance (KWA) Kentucky Aquatic Resources Fund (KARF) following issuance of this BO and prior to initiating any construction below the ordinary high water level. This contribution will provide mussel habitat impact minimization and includes both direct and indirect impacts to habitat. These funds will be used for the preservation, creation, enhancement, and/or protection of federally listed mussel habitat in the lower Ohio River and/or Tennessee River. The total contribution of \$45,315 shall be made using certified funds and should be made payable to "Kentucky Waterways Alliance" listing KARF and any other

appropriate details in the memo section. The total contribution of \$45,315 may be made in two separate and equal payments. These payments will each be made prior to the two construction phases (i.e., 1st construction phase: truck-loading facility and deadmen construction and 2nd construction phase: remaining mooring cell and dolphin construction). The contribution shall be mailed to the attention of Judith Petersen, Executive Director, Kentucky Waterways Alliance, 120 Webster Street, Suite 217, Louisville, Kentucky 40206. The KWA office telephone number is 270-524-1774. Contact Ms. Petersen if the contribution will be made by direct deposit or a wire transfer. Not later than January 30th of each year, USFWS will provide an annual report to CALX containing an accounting of these funds to include the beginning balance of the account, a summary of the expenses, and interest earned until these funds have been exhausted.

16.5. CALX shall contribute \$544,500 to the KWA KARF following issuance of this BO and prior to any construction below the ordinary high water level. These funds will be used in recovery efforts for the federally listed mussels addressed in this BO, thereby minimizing the take expected to occur on this project. The total contribution of \$544,500 shall be made using certified funds and should be made payable to "Kentucky Waterways Alliance" listing KARF and any other appropriate details in the memo section. The total contribution of \$544,500 may be made in two separate and equal payments. These payments will each be made prior to the two construction phases (i.e., 1st construction phase: truck-loading facility and deadmen construction and 2nd construction phase: remaining mooring cell and dolphin construction). The contribution shall be mailed to the attention of Judith Petersen, Executive Director, Kentucky Waterways Alliance, 120 Webster Street, Suite 217, Louisville, Kentucky 40206. The KWA office telephone number is 270-524-1774. Contact Ms. Petersen if the contribution will be made by direct deposit or a wire transfer. The contribution shall be made within 15 weekdays of the completion of the relocation effort. Not later than January 30th of each year, USFWS will provide an annual report to CALX containing an accounting of these funds to include the beginning balance of the account, a summary of the expenses, and interest earned until these funds have been exhausted.

16.6. CALX shall develop a plan to remove mooring cells/dolphins and restore this area to habitat suitable for mussels once the life of this project is considered complete and shall obtain USFWS's prior written approval of the plan before any new construction activity occurs at or below the ordinary high water level.

TVA would impose the following special conditions on its Section 26a approval:

1. CALX shall comply with the stipulations stated in the *Memorandum of Agreement Between the United States Army Corps of Engineers and the Kentucky Heritage Council Regarding the Construction of a Barge Fleeting Facility and Quarry in Livingston County, Kentucky*, signed on January 21, 2011.
2. CALX shall comply with the stipulations and requirements of the BO issued by USFWS on November 17, 2010, as set out in USACE special conditions 16.1 through 16.6.
3. CALX shall implement the *Stream and Wetland Mitigation Plan for CALX Resources Chaudet Creek Quarry* as revised January 4, 2011.

4. For all electrical services permitted, a disconnect must be located at or above the 348.5-foot contour that is accessible during flooding.
5. For purposes of shoreline bank stabilization, all portions shall be constructed or placed, on average, no more than 2 feet from the existing shoreline at normal summer pool elevation.
6. All floating facilities shall be securely anchored to prevent them from floating free during major floods.
7. CALX shall provide TVA with documentation of compliance with Special Conditions 1 through 6.

Conclusion and Findings

Formal consultation with USFWS under Section 7 of the ESA has been completed. Mitigation measures 16 through 16.6 above are conditions of approval that support the stipulations of the BO. With these measures in place, potential effects to federally listed species would be insignificant. Requirements of Section 7 of the ESA are satisfied. An MOA between USACE and the Kentucky Heritage Council was signed on January 21, 2011. The execution of the MOA concerning the treatment of historic properties satisfies the requirements of Section 106 of the National Historic Preservation Act. Potential effects to historic properties would be insignificant.

Adherence to the Wetland Mitigation Plan and compliance with USACE mitigation measure 14 above would satisfactorily compensate for potential losses to wetland functions. Consistent with the Alternative Action, CALX reconfigured operations to reduce adverse effects to waterways and wetlands to the extent practicable. Thus, the conditions of Executive Order 11990 (Protection of Wetlands) are satisfied. The proposed barge terminal facilities and access road are considered repetitive actions in the floodplain, and there is no practicable alternative to locating such facilities in the floodplain. Adverse impacts would be minimized by elevating all flood-damageable equipment above the 100-year flood elevation and using the least amount of fill possible for the access road. Thus, the proposed action is consistent with Executive Order 11988 (Floodplain Management).

Based on the analyses in the USACE EA and on its own determinations, TVA concludes that the approval of the proposed barge terminal facility and stream crossings under Section 26a of the TVA Act and subsequent operation of these facilities would not be a major federal action significantly affecting the environment. Accordingly, an environmental impact statement is not required.



February 9, 2011

Susan J. Kelly, Senior Manager
Federal Determinations
Environmental Permits and Compliance
Tennessee Valley Authority

Date Signed

Attachment 1. Aerial Photograph of Proposed Quarry Site

