BSK Associates
Engineers & Laboratories

3140 Gold Camp Drive, Suite 160
Rancho Cordova, CA 95670
(916) 853-9293
Fax (916) 853-9297

3/11/10

Technical Memorandum

From: Erik Ringelberg,
TAC Biologist, BSK Associates, Inc.

To: Mr. Kent Reeves,
Principal Natural Resources Planner Yolo County Parks and Resources Department

Re: Granite Esparto Mining and Reclamation Project – Streambank Stabilization Plan Consistency Analysis

Thank you for the opportunity to review the Granite Esparto Mining and Reclamation Project – Streambank Stabilization Plan. In addition, I reviewed a series of supporting documents provided by the County and available on the County's website (http://www.yolocounty.org/index.aspx?page=1799)

The scope of my review was to assess the consistency of proposed Hydraulics Study and Streambank Stabilization Plan with County Cache Creek Area Plan and related ordinances from the TAC biologist perspective. The information provided to me on the Plan sheets identified a suitable mix of native plants and numbers of plant for the final site revegetation. However, I was unable to identify other written information that would allow me to determine consistency with the CCRMP.

In the March 8, 2010 TAC Public Meeting, Granite representatives identified that the Streambank Stabilization would occur in phases and that it could take up to 10 years past project approval to complete filling the cells behind the stabilization levee. In addition, Granite representatives identified that the revegetation requirements would follow previous plans.

The intent of the CCRMP's test 3 line does appear to be met by the overall plan.

> "At the same time, the CCRMP would result in the reshaping of portions of Cache Creek according to the conceptual design provided in the Test 3 Run Boundary (see Figure 4). ... In addition, selected banks and levees will be excavated to provide gentle transitions

into and out of the channel bottlenecks created by the bridge structures." (CCRMP Pgs. 28-9)

"Management of the Creek has to consider other values as well. Conditions must be created to allow riparian vegetation to flourish, as long as it does not adversely affect stream flow. Growth along the banks is especially encouraged, both for erosion control and to contain the highest flow velocities within the center of the creek. Streambank transitions and scour reduction measures should be implemented to protect structures along Cache Creek, especially bridges, which represent a major public investment." (CCRMP Pg. 319)

"2.4-12 Focus efforts on reshaping the channel banks immediately upstream and downstream of both County and State bridges to minimize scour and erosion. Work on the stream banks could be accompanied by the construction of check dams or weirs within the channel, downstream of the bridges, to encourage aggradation. These measures will not only create a more stable channel, but also will also help in preventing structural failure and prolong the life of local bridges. The length of the transitions shall be five times longer than the width of the channel at the bridge site, and shall incorporate guide banks, grade control structures, dikes, berms, vegetation, and other similar measures. **Such methods and practices shall incorporate riparian vegetation and increase wildlife habitat values to the extent that the objective of minimizing scour and erosion are not compromised**." (ER: Bolding added for emphasis)

It is clear from the preceding paragraphs that the CCRMP specifically emphasizes restoring riparian vegetation as well as increasing wildlife habitat values as a key element in implementing the test 3 line, not as an afterthought.

Issue 1. There is nothing in the submitted plans that identifies the required and stated consistency with previous revegetation plans.

Issue 2. The Site Specific Technical Studies specifically appear to exclude this area, in particular, the Habitat Restoration and Landscape Visual Screening Plan (2007) and the Biological Assessment (2007; Attachement D. pg. 7.). I was not able to assess the consistency with the previous revegatation plans or site specific requirements that might be more suitable for this site and the proposed Streambank Stabilization activities.

Issue 3. Staged native soils stockpiled at depths greater that a couple of feet (or typical rooting depth) can lose the important soil structure and organic material composition fairly quickly. Backfilling these cells and recreating the soil horizons as soon as practicable will be much more successful in restoring this site. In addition, there appears to be no requirement in the plans to fill these cells to grade. As there is no revegetation plan provided, these provisions would be beneficial in achieving the stated project goals.

Issue 4. The CCRMP has several specific requirements (Performance Standards) that must be met for revegetation. :

4.5-6 Dense vegetation shall be emphasized along the stream bank to create a distribution of velocities within the channel, with the highest velocities occurring within the low-flow channel. To ensure adequate water supply for new plantings, secure irrigation systems shall be provided for revegetation projects within the planning area.

4.5-9 All plant materials should be collected in the vicinity of the project site in order to maintain the genetic stock and provide the most site-adapted ecotypes. If seeding of native herbaceous species is proposed, seeds should be collected, cleaned, tested for viability, and stored appropriately by a qualified native seed supplier. Cottonwood cuttings shall be collected and contract-grown at a nursery with staff experienced in the propagation of native plants. Alternatively, cottonwood cuttings can be collected from vegetation in the project vicinity and

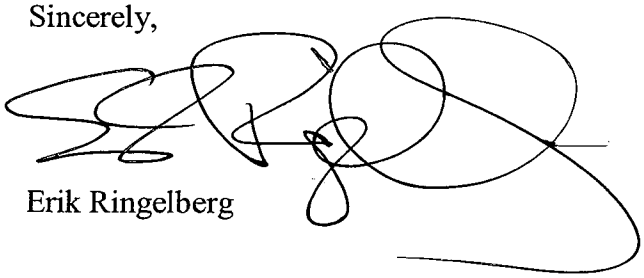
4.5-14 (b) Trees and shrubs shall be planted in clusters to create alternate patterns of open and enclosed spaces.

4.5-15 (a) Trees and shrubs shall be planted in clusters of six (6) to seven (7) individuals, typically consisting of a single species. Some mixed groupings, such as valley oak and elderberry may occur where appropriate. Gray pine, however, shall be planted singly (not in clusters) at the higher elevations of the site. Clusters of trees and shrubs shall be planted from twenty-five (25) to fifty (50) feet apart, with native grasses in-between.

In conclusion, the proposed project meets the intent of the CCMP test 3 line, however the plan requires several modification for biological elements to meet the specific requirements.

Please let me know if you have any further questions or comments.

Sincerely,



Erik Ringelberg