Appendix C
KSN Profile Sounding and Cross-section Control Point Survey Summary

MERCED RIVER RESTORATION
SOUNDING AND CROSS-SECTION CONTROL POINT
SURVEY SUMMARY

KSN surveyed 444 points within the river channel to generate a profile along the Merced River Corridor from the Snelling Diversion Dam to approximate 2.6 miles downstream from the bridge at Snelling Road crossing the Merced River. All of the data was collected on the project coordinate system using RTK or Continuous GPS Survey Styles. Standard practice for RTK and Continuous GPS Surveys include set-up of a base station and radio on the project control and checking into other project control prior to the collection of any new data. Two methods of GPS survey techniques were utilized to collect the survey data. In deep-water areas, a Ross 825 Hydrographic Survey Grade Sounder was combined with a Trimble 5700 Survey Grade GPS Receiver. In shallow-water areas suitable for wading, data was collected with direct readings using a Trimble 5700 Survey Grade GPS Receiver. Areas of overlapping data were collected utilizing both methods to compare and check resulting data. This allowed for quality control and quality checking of the data on a daily basis.

KSN surveyed 72 cross-section control points along the river corridor from the Snelling Diversion Dam to approximately 1.3 miles downstream from the bridge at Snelling Road crossing the Merced River. The points were set by Stillwater Sciences at designated locations along the river alignment and surveyed by KSN using a combination of RTK, Static and Fast-static GPS methods. Conditions were sometimes less than ideal for satellite observations due to the location of the control points. Therefore, some of the observations were disregarded. Cross-section control points occupied utilizing RTK methods were observed for one session under a single receiver initialization and then checked with a second receiver initialization. The results of each independent observation were then compared for quality control and quality checking of the data. Cross-section control points, which required static or fast-static methods of observation, were occupied at lengths of time dependent upon the number of available satellites for the session of occupation. The occupations were than post-processed upon completion of the survey, and loop closures were generated for the courses of the receivers running during each session. For static and fast-static occupations a minimum of two other receivers, located on the primary control network for the project, were running at the same time. Multiple baselines and loop closures allowed for the quality control and quality checking of the data.