

**A METHOD FOR COMPARING THE LISST 100 TO THE USGS PIPETTE METHOD
FOR SUSPENDED SEDIMENT PARTICLE SIZE ANALYSIS IN THE MARINA
SEDIMENT LAB, U.S. GEOLOGICAL SURVEY CALIFORNIA WATER SCIENCE
CENTER**

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Abstract: The Marina Sediment Lab of the USGS California Water Science Center has a need to automate and expand the number of suspended sediment samples that can be processed for particle size analysis. Measuring the LASER scatter of suspended sediment particles is one method that shows promise for sediment lab application. The LISST 100 uses **LASER In-Situ Scattering and Transmissometry (LISST)** to determine particle size distribution in a water/sediment mixture sample volume. The technology used by this instrument offers the potential to increase the number of samples submitted to the lab for full particle size analysis, and at the same time, offers the potential for faster sample processing, along with improved data base entry. The LISST 100 is intended to operate as an in-situ time-series data collection instrument for monitoring suspended sediment concentration and particle size distribution in water bodies. A LISST 100 Type B was purchased by the Marina sediment lab. Theoretically, the LISST 100 has no lower concentration limit. However, there may be a practical lower concentration threshold where a particle size distribution may have little meaning. The upper concentration limit is reported by the vendor to be approximately 500 mg/l, but higher concentration samples could be analyzed after splitting and/or dilution. Testing will help determine the practical limits of using this technology in a production lab.

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