

KELLOGG SOIL SURVEY LABORATORY REACHES NEW MILESTONE IN NUMBER OF SAMPLES LOGGED

In 2001, the Kellogg Soil Survey Laboratory (KSSL) brought online a laboratory information management system (LIMS). Just recently, KSSL Senior Analyst Michelle Etmund applied LIMS label number 250,000 to a soil sample, providing an opportunity to highlight KSSL achievements while using LIMS.

LIMS is a custom-made software system designed for the unique and changing needs of the KSSL and its customers. After samples are logged-in, LIMS manages soil information as samples move through the analytical process, including recording results, performing calculations, and organizing and reporting data.

Each sample represents a horizon in a soil profile. Typically, all horizons to a depth of 2 meters are sampled. At the KSSL, about 15 analytical methods are applied to each sample. Some methods produce multiple results. For example, the trace element procedure yields results for 22 elements. LIMS demonstrates its immense value by managing such information in support of more than 25 KSSL analysts and scientists who routinely use LIMS to record data, perform calculations, and retrieve and report soil information. Analytical data from LIMS is reported directly to samples submitters and is made available through a publically accessible website: <http://ncsslabdatamart.sc.egov.usda.gov/>

Since 2001, the LIMS database has accommodated:

- Approximately 15,000 samples per year
- More than 2,300 projects
- More than 30,000 pedons
- More than 129,000 layers
- More than 3,500,000 individual measurements of over 50 chemical, physical, biological, and mineralogical properties used to classify the soils, to make interpretations concerning best use and management, and in efforts to assess soil quality.

It is estimated that the KSSL LIMS does the work of at least three full-time employees, while also reducing errors and facilitating quality control. In short, LIMS is an extremely valuable “hidden player” in the process of efficiently producing quality data for KSSL customers.



Michelle Etmund managing one of the many thousands of samples received by the KSSL.



Sample 250,000 happened to be from Kidder County, North Dakota! (No kidding! 😊)