**6-Axis Robot Video Script**

**YouTube Information:**

Title: Virtual Hydraulics Lab Tour – 6-Axis Robot

Description: A brief overview about the numerous ways the robotic arm is utilized to help conduct physical experiments in the MFS.

**Script:**

An automated robotic arm is used to perform tasks such as sculpting channel banks or flattening the riverbed. It can also be utilized to laser scan objects, as well as the channel bed, in order to create three-dimensional river bed/scour bathymetries. Different instruments can also be mounted to the arm, such as a force sensor to measure flow forces on an object.

**508 Caption Description:**

This video starts with the robot arm pointed downward into the test channel of the flume holding a large plastic blade. Sand is piled up along the right side of the test channel, and as the robot arm travels down the channel, it sculpts and flattens the sand at a 45-degree angle to create a channel bank. The video then shifts to the robot arm lowering a laser scanner into water in the flume. A smaller video appears in the lower left corner showing an underwater view of scale dolosse positioned in sand material. A laser beam slowly pans over the objects while the text appears that reads “Underwater Laser Scan of Dolosse in the Channel Test Section.” A computer model of the three-dimensional point cloud data appears on the screen, showing the bathymetry results from the laser scan. The scan reveals the two delosse among the ripples in the sediment material, while text appears that reads “Scanned 3D Point Cloud Data.” The robot arm is then shown lowering a large bundle of delosse and dowel rods into the flowing water in the channel test section. Text appears on the screen that reads “Drag and lift forces measurements on a single ELJ installation for different flow velocities (model scale 1:25).”