Key Talking Points about Oil in the Loop Current

1. A team of federal scientists (USGS, NASA, NOAA, others ??) has determined that thick oil reached the Gulf of Mexico's Loop Current as of May 19, 2010.

2. The confirmation of thick oil in the Gulf's Loop Current is based on a rapid method developed by the USGS.

3. They analyzed images from a May 19 flight over the Gulf Oil using AVIRIS technology (Airborne Visible/Infrared Imaging Spectrometer).

4. AVIRIS is the same technology used to estimate the volume of sea-surface oil from the Deepwater Horizon oil spill.

Technical Background about the AVIRIS methodology and the USGS analysis:

The USGS report describes a method to create color-composite images indicative of thick oil emulsion on the ocean's surface using normalized difference ratios derived from remotely sensed data collected by an imaging spectrometer.

Imaging Spectroscopy is a hyperspectral visible and infrared remote sensing method which maps chemical composition. AVIRIS is much like a digital camera which measures visible and near-infrared light in 224 bands in a vast number of pixels. Every chemical compound has a unique spectrum, or combination of reflection or absorption, analogous to our sensitivity to color in the visible spectrum

The bands used in the normalized difference ratios are located in wavelength regions where the spectra of oil on the ocean's surface has a distinct shape compared to clear water and clouds. In contrast to quantitative analyses, which require rigorous conversion to reflectance, the method described is easily computed and can be applied rapidly to radiance data or data that have been atmospherically corrected or ground-calibrated to reflectance.

AVIRIS images of data collected on May 17 and 19, 2010 over the Deepwater Horizon oil spill in the Gulf of Mexico are shown in the USGS publication.