

# Creep into the DEEPEND

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# SEAMAIL™

FROM: DEEPEND Science Team  
TO: DEEPEND Virtual Team Leaders  
SUBJECT: CTD

Hi Virtual Science Team,

Every time we cast MOCNESS to collect animal samples, we want to take other kinds of samples, too. What kind of information do you think would help us understand the animals and their movement throughout the day and night? How would you collect that information?

To find out more we use a piece of technology nicknamed a **CTD**.

CTD stands for **C**onductivity (salinity), **T**emperature and **D**epth. Those are just three of many things this piece of equipment measures for us.

The CTD is connected to a circle of very tough, large bottles. The bottles collect water at various depths. Sometimes these bottles even collect small plankton that we need to take out. Before we lower the CTD through the water column, we can connect up to 8 different devices. Some have lasers that measure particles. Others measure how much oil is in the water. Some collect data on how acidic the ocean is. When everything is together, it can cost over \$300,000!

We have to be very careful when we use the CTD, though. There are more than 270 volts of electricity running through it. As you know, electricity and water can be a very dangerous combination. If we are not careful, we might get shocked! Sometimes, if one of the bottles is sent down with the CTD and is not open, it will explode from the intense change in pressure when the CTD moves from the surface to the seafloor. Luckily, this will only happen at depth where no humans or animals will be hurt.

The CTD starts sending us information the moment it enters the water. It talks to our computer. We monitor the information it sends on the computer monitor. This allows us to decide where we would like to collect water samples for further analysis.

Once we return from the cruise, scientists from all over the world use the data we collect. How would you use the information our CTD gathers in the Gulf of Mexico?

Oh, the CTD and MOCNESS just came back up. Thanks for joining us!

*Jackie*

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Creep into the DEEPEND Mission



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