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## QUICK REFERENCE

### **SBE 19, 19plus, 19plus V2 – OIL SPILL DEPLOYMENT PROTOCOLS** (ver. 06/03/10)

Sea-Bird CTDs can be deployed in oil; oil will not cause long-term damage. Oil coatings inside the conductivity cell and on the dissolved oxygen sensor membrane can possibly affect the sensor's calibration. Simple measures can help minimize this and the effects:

#### **I. MINIMIZE INGESTION OF OIL INTO CONDUCTIVITY CELL AND DO SENSOR:**

- Set CTD so that the pump does not turn on until the CTD is in the water and below the layer of surface oil.
- Pump turn-on is controlled by two user-programmable parameters:
  - 1) the minimum conductivity frequency, or
  - 2) the pump delay
  - 3) use one or both 1) and 2) together
- 1. Set **minimum conductivity frequency** for pump turn-on above instrument's *zero conductivity raw frequency* (shown on conductivity sensor Calibration Sheet and on Configuration Sheet)
  - For salt water applications = *zero conductivity raw frequency* + 500 Hz
  - For fresh/nearly fresh water = *zero conductivity raw frequency* + 5 Hz
- 2. Another option: Set the **pump turn-on delay time** to control the pump:
  - Set the **pump turn-on delay time** to allow enough time to lower CTD below the surface oil layer.
  - The CTD starts counting the pump delay time after the **minimum conductivity frequency** is exceeded.
  - You may need to set the pump delay time to be longer than our typical 30 - 60 second recommendation if you will not get CTD in water quickly.

#### **II. COMMANDS FOR SETTING MINIMUM CONDUCTIVITY FREQUENCY and PUMP DELAY**

The minimum conductivity frequency and pump delay can be checked by sending the **DS** (display status) command to the CTD.

- **SBE 19 command is SP** (SBE 19 responds with prompts for parameters)
- **SBE 19plus and 19plus V2 commands are**
  - **MinCondFreq=X** (where x is the value you require)
  - **PumpDelay=X** (where x is the value you require in seconds)

#### **III. SOME ADDITIONAL DEPLOYMENT TIPS (based on recommendations from a customer working in the Gulf of Mexico oil spill zone):**

1. If oil on surface, use boat engines or paddles to clear the surface water.
2. If sheen remains, use dishwashing liquid (e.g., Dawn) to disperse oils.
3. Deploy CTD/carousel through clearing.
4. Repeat 1 and 2 if oil reappears prior to removing CTD/Carousel from water.
5. Recover and clean according to instructions.

**If you have methods that are working, and you would like to share them with us and others, please send us an email ([cjanzen@seabird.com](mailto:cjanzen@seabird.com))!**