

# Why The CATTfish is a Useful Tool

The *CATTfish* device was designed and built by Carnegie Mellon University and Mellonhead Labs. *CATTfish* stands for Conductivity And Temperature in your Toilet, and it will be doing just that, measuring the temperature and water conductivity in the tank (not bowl) of your toilet.

Conductivity is the ability of a sample of water to carry an electrical charge. The greater the charge the higher the conductivity will be. Readings found to be above average for a sample of water generally means that there are unseen particles suspended in the water, increasing the water's conductance. The *CATTfish* measures the amount of conducting particles floating around in your water. These can be anything from salts to larger complex molecules, some of which can be harmful to your health.

# How to Use the CATTfish

#### Installation

- 1. Charge the CATTfish display box for roughly 1-2 hours via the USB cable before initial use.
- 2. Remove the top lid to the tank of your toilet and place the *CATTfish* sensor within the water of the tank. Make sure to keep it clear of the working mechanisms of the toilet in order to ensure clear readings with no damage.





- 3. Replace the lid of the tank, leaving the cable connected to the *CATTfish* sensor dangling off the rear of the tank.
- 4. Connect the sensor cable to the *CATTfish* display box. Take your first sample to establish a baseline reading by pressing the button on the display box. The sensor may take a few minutes to stabilize after initial setup.

#### Use

- 5. Readings should then be taken a minute or so after the toilet has been flushed, in order to ensure that the tank is full of water. This is done by pressing the button on the display box outside of the toilet tank.
- 6. How often a reading is taken is up to the user, but we encourage you to take a reading every time you go into the bathroom to use the toilet.

### Upkeep

- 7. The device should be charged every 3-4 weeks, about once a month. To do this, unplug the *CATTfish* display box from the sensor and use the USB charge cable and wall attachment to charge it for an estimated 2-3 hours. While the monitor is charging, it is recommended to also remove the white *CATTfish* sensor from the toilet tank and to wipe it down with a clean cloth in order to ensure no buildup will occur on the sensor.
- 8. After a monitoring period of 1-2 months, EHP will collect the device to download the recorded data for analysis. All the data is stored within the display box, so it is imperative that this box stays dry at all times. We recommend that you allow us to conduct the download process as part of the analysis.

# **How to Interpret Results**

After you press the button to take a reading, a fish will swim across the screen to show that a reading has been taken. Readings will then appear on the screen, with the current reading taking up the left side of the screen and the average and max readings of the past 10 samples taking up the right side. All of these will be presented in terms of  $\mu$ s/cm. The current reading will also have the words "high, normal, or low" underneath the numbers. The device will collect and store data on water temperature to normalize the conductivity readings. These temperature readings will not be displayed on the screen.

#### When to be Concerned

Once the baseline conductivity level has been established for your unit, which may take up to a week, an <u>increase of 200 units ( $\mu$ s/cm) from the average that lasts for more than a day</u> or two warrants getting your water tested by a certified laboratory. An example of this would be if your average readings are 500, and for two days you receive current readings of 700 or higher, it would be worth noting and taking some form of action either by contacting us or some governmental authority. It is best to stop drinking and cooking with your water when the conductivity reaches outside the EPA's safe drinking levels, 30-1500  $\mu$ s/cm, but we would recommend that an increase of 200 units over two or more days would be another reason to stop using your water. This is because it is impossible to tell what is contaminating your water without further testing, and prolonged exposure to small levels of contaminants has been shown to have similar effects as short exposures to high levels of contaminants.

#### **Questions and Concerns**

If you have any concerns about your health potentially relating to natural gas drilling activities, please call our office and speak with our nurse practitioner. EHP's team is also available to answer any other questions you may have, and is able to help you interpret and understand your CATTFish water monitor results.

To contact our office please call: 724-260-5504. Our office is open Monday-Friday from 8am-4pm. Another option is to send us an email at <a href="mailto:info@environmentalhealthproject.org">info@environmentalhealthproject.org</a> and we will get back to you as soon as possible.

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