



How to use...

# **Turbidity Kit** (LaMotte Turbidity Kit Model TTM) INSTRUCTION SHEET

## **Testing Location** – Field or Laboratory

It is not necessary to do this experiment in the field; however if time and conditions permit, it is always advised. If stored in the classroom, shake the water sample before doing this test.

## **Testing Background**

The turbidity test compares the cloudiness of a measured amount of sample with an identical amount of a clear sample. The readings are made by looking down through the column of liquid at a black dot. If turbidity is present, it will interfere with the passage of light through the column and cause blurring or cloudiness. Any color present should be disregarded. The turbidity analysis only determines the haziness of the sample.

## **Materials**

- Standard Turbidity Reagent
- 2 LaMotte Turbidity Columns (glass)
- Test tube brush
- Plastic Pipette (eyedropper), with a 0.5 mL measurement line
- Plastic stirring rod
- Distilled water

## **Testing Instructions**

*Caution: Due to the personal subjectivity of this test, more than one person should help with this test to ensure that all readings are consistent.*

1. If the sample has been stored in the classroom for a long period of time, shake the sample to remix the particles in the water. Do not do this if the turbidity test is being conducted in the field because the sample bottle's dissolved oxygen may need to be tested still. Shaking them affects dissolved oxygen levels.
2. Fill one Turbidity Column to the 50 mL line with the sample water. If the black dot on the bottom of the tube is not visible when looking down through the column of liquid, pour out a sufficient amount of the test sample so that the tube is filled to the 25 mL line. Hopefully you can now see the dot.
3. Fill the second Turbidity Column with distilled water (as an alternative, clear tap water can be used) to the same level as the first Turbidity Column.
4. Place the two tubes side by side and note the difference in clarity. Compare the fuzziness of the black dot, how many white dots appear on it, and how crisp the dot's edges are. If the black dot is equally clear in both tubes, the turbidity is zero. If the black dot in the sample water tube is fuzzy, proceed with the instructions.

- Shake the Turbidity Reagent vigorously. Fill the pipette (eyedropper) to the 0.5 mL. Add ALL (not drops) of this 0.5 mL to the “clear water” (the distilled water, not creek water) tube. You are trying to cloud up the clear water to match your creek water sample.



- Using the stirring rod, which sometimes slips down beside the foam in the bottom of the test kit container, stir contents of both tubes to distribute the particles. Check for the amount of turbidity by looking through the solution at the black dot. If the turbidity of the sample water is greater than that of the “clear water,” continue to add the reagent in 0.5 mL increments to the “clear water.” Mix carefully after each addition. Continue to add reagent until the turbidity of the “clear water” equals that of the sample. Record the total amount of reagent added.
- Each 0.5 mL addition to the 50 mL size sample amount is equal to 5 Jackson Turbidity Units (JTUs). If a 25 mL sample amount was used, each 0.5 mL addition of reagent is equal to 10 Jackson Turbidity Units.

TURBIDITY TEST RESULTS			
Number of Measured Additions	Amount in mL	50 mL Graduation	25 mL Graduation
1	0.5	5 JTU	10 JTU
2	1.0	10 JTU	20 JTU
3	1.5	15 JTU	30 JTU
4	2.0	20 JTU	40 JTU
5	2.5	25 JTU	50 JTU
6	3.0	30 JTU	60 JTU
7	3.5	35 JTU	70 JTU
8	4.0	40 JTU	80 JTU
9	4.5	45 JTU	90 JTU
10	5.0	50 JTU	100 JTU
15	7.5	75 JTU	150 JTU
20	10.0	100 JTU	200 JTU

- Rinse both tubes after each test and scrub with the test tub brush. Make sure you did this test twice, once with sample A and once with sample B.

### Disposal and Clean Up

The samples from the Turbidity Columns can either be emptied into the waste container to be dumped down the classroom sink or they can be dumped on the ground. Clean the Turbidity Columns with distilled water and scrub brush.

### Safety Precautions

Normal safety precautions should be taken when handling the water sample, solution and the equipment to avoid breakage.

*This test sheet was adapted from the LaMotte Company (Chestertown, Maryland) Turbidity Test Kit ModelTTM, Code Number 7519.*