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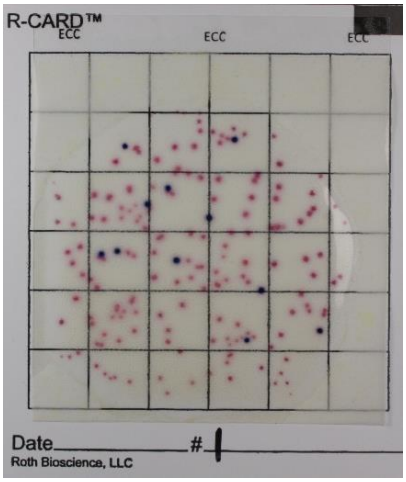
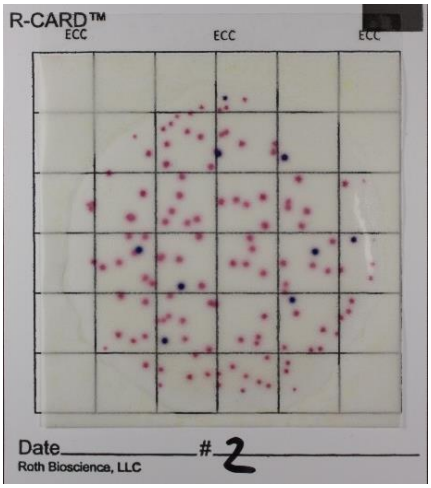
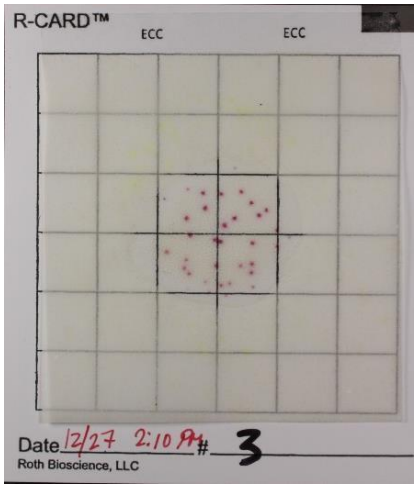
R-CARD® WATER SAMPLES THAT ILLUSTRATE HUMAN ERROR IN SAMPLE APPLICATION

This set of R-CARD®s contains one set of 3 where cards 1 & 2give virtually the same ***E. coli (blue CFU's)*** numbers (read as11 & 9) with the third R-CARD® lacking any blue ***E. coli CFU'S.*** The samples were all taken from the same area and each was intended to contain a volume of 1 mL of aqueous inoculum. All were finished within a 5 minute time period. Following are photos of the three R-CARDS (1, 2, 3) involved. The question is "what caused this result??"







If lighting conditions, sight, or careful scrutiny of the aqueous (water) sample in the calibrated transfer pipette are not carefully observed prior to its deposit onto the bottom of the R-CARD®, there may be a condition where a portion of the barrel of the pipette contains only an air space instead of the aqueous sample, such that instead of the pipette containing a full 1 mL of aqueous sample (water), it contains only a fraction of the sample. When the top of the RCARD® is lifted and the contents of the pipette are deposited onto the R-CARD® bottom, only a small part of the intended amount is deposited due to the air in the pipette barrel. This results in only a fraction of the intended sample being tested, and inaccurate counts result. This is not the fault of the R-CARD® method, but is due to operator error.

Avoidance of the above described error can be easily acquired by following several simple guidelines.

1. When using transparent or translucent walled pipettes, consciously check for the presence of air-filled portions of the pipette.
2. Do not use plastic pipettes that have been shrunk or distorted by overheating to sterilize for reuse. (autoclaving, microwaving when wet, cooking in boiling water
3. CONCENTRATE ON THE IMMEDIATE TASK. DO NOT BE DISTRACTED.
4. It is easy to follow the circular spreading of the inoculum into a 2-3 inch liquid pattern that then solidifies into a clear gel within 2-3 minutes.