

**Chart 3: Single Well, Bad Channel or Insufficient Light
Run Aborted– Insufficient Light in Well XX (Error 20)**

This problem is generally due to insufficient light in a single well. The problem may be due to dust/dirt buildup in the instrument, to a failure in the detector board, in the fiber optic stack, or in other circuitry corresponding to well location. If the error message only occurs at a low wavelength (such as 340 nm) and goes away at higher wavelengths, the problem may be due to insufficient light coming from the lamp or to a problem with the filter.

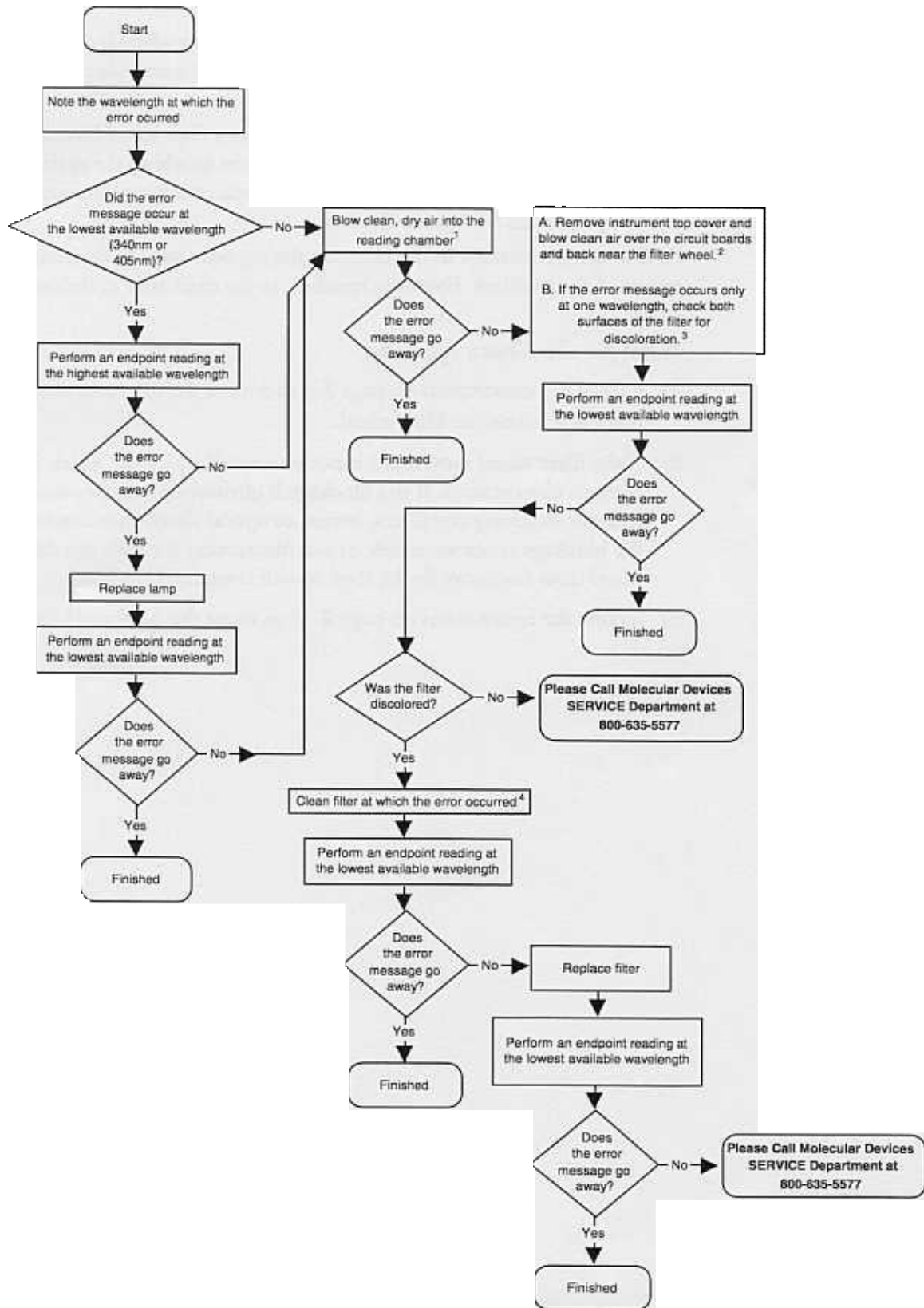
To override this error message, you may hold down the **PRINT BLANK PATTERN** key while powering up the microplate reader. However, please note that once you have done this, other bad wells will NOT be diagnosed.

Follow the instructions in the chart on the opposite page to determine the source of the problem. Footnote numbers in the chart refer to the notes given below.

Notes for the Chart, opposite:

- 1) Use a source of clean, dry air such as canned air to blow into the reading chamber and remove any dust buildup. **See caution, below.** To do this, manually open the drawer about halfway (or, if the drawer is open, close it halfway) and blow the air into the reading chamber.
⚠ CAUTION: If using canned air, please note the cautions regarding freezing listed on the label of the product before proceeding with this step.
- 2) On Emax and Vmax units, you may also wish to remove the top cover of the instrument and blow, clean, dry air over the exposed filter wheel and over the circuit boards and in the back of the instrument near the filter wheel. **See caution, above.** For instructions about removing the top cover of the microplate reader, please see page 7-4.
- 3) Both surfaces of the filter should be monocolored and shiny.
- 4) See “Cleaning an Optical Filter” on page 8-49 for detailed instructions about this procedure.

Chart 3



Cleaning Optical Filters in Series-I Readers

Optical filters should be periodically cleaned depending upon the environment where the reader is located. A yearly cleaning is usually sufficient.

1. With machine turned off and unplugged, remove the top cover and then access and remove the filter using the instructions in the User's Manual for Installation of optional optical filters, or by using the instructions in the electronic document, 'Series_1 filters.pdf'.
2. Hold the filter by the edge or place it on a clean tissue.
3. Clean the filter by using a soft, lint-free tissue. The tissue may be dampened with ethanol or methanol. **DO NOT SUBMERGE THE FILTER IN LIQUID.** Acetone is not recommended.
4. Once cleaned, replace the filter in the filter wheel and then replace the reader's top cover.