



## **NORTHWEST OPACITY CERTIFICATION**

An Enterprise of Yakima Regional Clean Air

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### **Helpful Hints for a Successful Visible Emissions Certification**

The following are suggestions and helpful information from which new and experienced readers can benefit. Visible Emission reading is a skill that needs to be developed and practiced. Don't be discouraged if you don't pass on the first run.

#### Be on time and prepared

1. Bring a clipboard, blue or black pen(s), and a compass.
2. It is very hard to focus and concentrate on a plume during a test if you are uncomfortable, distracted, or unprepared.
3. Good rain gear, waterproof footwear and an umbrella will be of tremendous benefit; classes are held rain or shine.

#### Fill out every test form completely and legibly

1. This is a legal document which validates your observation skills.
2. It represents your ability to perform valid observations to regulators and must be credible in any legal proceeding.

#### Wear a hat with a brim

1. Wearing a hat with a brim or bill can assist a reader in many ways. The brim or bill can be used to delineate the readable area of the plume and limit external distractions.
2. On sunny days, viewing a bright sky can cause eye fatigue and stress, affecting a reader's ability to concentrate; a baseball cap or brimmed hat can reduce these effects.
3. They can also be used to frame the stack, to focus on the most readable (darkest) part of the plume, or keep the rain from interrupting your concentration.

#### Bring a chair

1. You may wish to bring a chair to use for your comfort or necessity.
2. If the wind direction is variable, it may be necessary to reposition yourself in order to gain the best viewing position for the most accurate observations.

#### Re-Do's (scratches)

1. Re-do's may be called during the test by any person for any reason. A call to "re-do" or "scratch" the plume is the responsibility of the individual, and must be loudly and immediately proclaimed to both the group and the proctor.
2. Re-do's will not be recognized after the next plume has been called.

3. Many people are reluctant to call re-do's, feeling that it delays the run and may annoy others if excessive; however, being able to identify bad plumes is as important to observations as accuracy.
4. Good observers may fail because they have read a plume that should have been redone.
5. During the test, readers need to:
  - a. Take the environmental changes into account (background and wind) when making their observations,
  - b. Adjust their readings accordingly, and/or
  - c. May call a re-do.
6. Proctors will not call or identify re-do's for the class; their purpose is intended to facilitate communication between the class participants and the test operator.

#### Smoke generator stack height

1. The Effective Stack Height, relative to the observer, with both the observer and the base of the stack

on level terrain, would be 15 feet, minus the observer's eye-level height.

Example 1: If the observer is at ground level:

15 ft. (stack height), minus 6 ft. (person) = 9 ft. Effective Stack Height

Example 2: If the observer is not at ground level:

(example: you are on top of a 4-foot deck):

15 ft (stack height), minus 6 ft. (person) + 4 ft. (deck height) = 5 ft. Effective Stack Height.

#### Read the EPA Field Manual and QA Handbook

1. Review the rules for opacity reading.
2. Make observations under conditions of the best possible illumination and visibility; sometimes it is necessary to move during the test.
3. Use contrasting backgrounds.
4. Read perpendicular to the plume. Consider the stack height, the wind direction, and distance from the plume.
5. Keep the sun to your back and avoid reading during mid-day in the summer (when the sun is high in the sky).
6. Document your reading conditions thoroughly.
7. Completely fill in the Visible Emissions Observation form.
8. Read the densest part of the plume.

#### Relax and focus

1. Avoid distractions.

#### Establish a routine

1. Do the exact same things prior to and after each reading.



