Classifying and Measuring Aerosol Particles

*Directions: Using the directions provided, classify each particle as either mineral dust or soot. Next, measure each particle using a ruler. Make sure you measure the scale so you know the conversion factor.*



Type: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Scale: 500 nm = \_\_\_\_\_\_\_\_\_ cm

Perimeter: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max Length: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max Width: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1



Type: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Scale: 500 nm = \_\_\_\_\_\_\_\_\_ cm

Perimeter: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max Length: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max Width: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2



Type: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Scale: 500 nm = \_\_\_\_\_\_\_\_\_ cm

Perimeter: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max Length: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max Width: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3



Type: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Scale: 500 nm = \_\_\_\_\_\_\_\_\_ cm

Perimeter: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max Length: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max Width: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4



Type: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Scale: 500 nm = \_\_\_\_\_\_\_\_\_ cm

Perimeter: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max Length: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max Width: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5



Type: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Scale: 1.00 µm = \_\_\_\_\_\_\_\_\_ cm

Perimeter: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max Length: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max Width: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6



Type: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Scale: 500 nm = \_\_\_\_\_\_\_\_\_ cm

Perimeter: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max Length: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max Width: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7



Type: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Scale: 1.00 µm = \_\_\_\_\_\_\_\_\_ cm

Perimeter: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max Length: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max Width: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8



Type: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Scale: 500 nm = \_\_\_\_\_\_\_\_\_ cm

Perimeter: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max Length: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max Width: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9



Type: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Scale: 500 nm = \_\_\_\_\_\_\_\_\_ cm

Perimeter: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max Length: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max Width: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10



Type: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Scale: 500 nm = \_\_\_\_\_\_\_\_\_\_ cm

Perimeter: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max Length: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max Width: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11



Type: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Scale: 500 nm = \_\_\_\_\_\_\_\_\_ cm

Perimeter: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max Length: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Max Width: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12

Questions:

1. Of the soot particles, which ones would you consider “round”? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What causes the particles to become more round? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Where do you think the dust particles came from? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. How do you think you would be able to determine the source of the dust particles? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Based on your notes, tell the “story” of particles 2, 9, 10, and 12.
6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_