

8.1 Sources of Pollution

Name: _____ Class: _____ Date: _____

Total: 9 marks

Objective

Build the skills to answer exam questions on **sources of pollution**.

You must be able to:

- distinguish **point-source** 点源 and **nonpoint-source** 非点源 pollution
- give examples of each
- explain why nonpoint pollution is harder to control

1 Worked examples

Study these first. Each one shows the method for a question type used later —follow the steps and you can do the Practice and Exam-style questions yourself.

■ Point vs nonpoint

- **Point source** —pollution from a **single, identifiable** location (a factory pipe, a sewage outfall).
- **Nonpoint source** —pollution from **many spread-out** sources (fertilizer runoff from farms, oil from roads).

■ Why nonpoint is harder

Point sources are easy to find and regulate. **Nonpoint** sources come from a wide area, so they are hard to trace and control —the main challenge in water pollution today.

■ A worked classification

A pipe discharging waste into a river is a **point source**; fertilizer washing off thousands of farm fields is a **nonpoint source**.

■ Controlling each

Point: regulate the pipe. Nonpoint: change land-use practices (buffer strips, less fertilizer) across the whole watershed.

2 Practice

Now apply the methods above.

2.1 What is a point-source pollutant? [1]

2.2 Give one example of nonpoint-source pollution. [1]

2.3 Why is nonpoint pollution harder to control? [1]

3 Exam-style questions

3.1 Fertilizer runoff from many farms is an example of [1]

- **A** point-source pollution
 - **B** nonpoint-source pollution
 - **C** air pollution only
 - **D** no pollution
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3.2 A river is polluted by both a factory pipe and farm runoff.

(a) Classify each source. [2]

(b) Explain why the farm runoff is harder to regulate. [2]

3.3 Suggest one way to reduce nonpoint-source pollution from agriculture. [1]

4 Go further

You are now ready for the real exam questions on this subtopic:

- work through the **8.1 Sources of Pollution** lesson on the **Learn** page;

- read the **Sources of Pollution** section of the AP Environmental Science handout on the **Know** page.

Solutions

2.1 Pollution from a single, identifiable location.

2.2 Any one: farm fertilizer runoff, road/urban runoff.

2.3 It comes from a wide, spread-out area, so it is hard to trace and control.

3.1 B —nonpoint-source pollution.

3.2 (a) Factory pipe = point source; farm runoff = nonpoint source. (b) The runoff comes from many spread-out fields rather than one pipe, so there is no single source to regulate.

3.3 Any one: buffer strips, reduced/precise fertilizer, cover crops, no-till.