



Maintenance Report

Vessel: MS Corrigan

Inspection of: Potable Water Distribution System

Problem: The **rate** of water movement through the system is too slow. Something is interfering with the flow.

Inspection Summary: We carefully examined each component of the rate process. First, we tested the **driving force**—the pump and motor. We found no malfunctions there. Then, we checked for blockages around the **inlet**, and found none. The temperature and **viscosity** are also normal. We identified no unwanted substances in the water. At several points along the piping, we measured the **flux**. The **flow rate** remains normal until the last segment, just before one particular **outlet**. This suggests that something is increasing **resistance** in that location. The problem may be a blockage, or possibly damage along the pipe's **diameter**.

Recommended Actions: We must temporarily cease all system functions. Then, we can remove the piping in the problem area and examine it. If that does not reveal the source of the problem, further investigation is necessary.

Get ready!

1 Before you read the passage, talk about these questions.

- 1 What are the parts of a typical rate process?
- 2 What are some factors that affect the rate of a substance as it moves through a system?

Reading

2 Read the report. Then, mark the following statements as true (T) or false (F).

- 1 ___ The technicians found a blockage near the inlet.
- 2 ___ The viscosity of the water was normal.
- 3 ___ The report recommends stopping system functions to allow further investigation.

Vocabulary

3 Match the words or phrases (1-6) with the definitions (A-F).

- | | |
|--------------|--------------------|
| 1 ___ inlet | 4 ___ viscosity |
| 2 ___ flux | 5 ___ resistance |
| 3 ___ outlet | 6 ___ rate process |

- A a place where something exits a system
- B a place where something enters a system
- C a slowing effect on a substance or object
- D the rate of movement at one particular point
- E the movement of a substance over a period of time
- F the quality of a liquid that affects its rate of movement

4 Write a word or phrase that is similar in meaning to the underlined part.

- 1 A measure of how quickly something happens might be expressed as a distance divided by a unit of time. _ a _ _
- 2 A motor is an example of a part of a system that propels something along a path. _ _ i v _ _ g f _ _ _ e
- 3 The distance from one side of the pipe to the other is too small for the volume of liquid that must pass through it.
d _ _ m _ t _ _
- 4 The technicians measured the speed of the substance throughout the system to determine the nature of the problem.
f _ _ _ _ a _ _

5 Listen and read the report again. What might cause too much pressure in a rate process?

Listening

6 Listen to a conversation between two technicians. Choose the correct answers.

- 1 What problem did the man identify?
 - A The flow rate is too high.
 - B The coolant is not reaching the outlet.
 - C The system contains a broken pipe.
 - D The flux changes throughout the system.
- 2 According to the woman, what is the likely cause of the problem?
 - A a leak near the inlet
 - B a blockage near the outlet
 - C the viscosity of the coolant
 - D an error while measuring the rate of movement

7 Listen again and complete the conversation.

Technician 1: I just performed some routine checks. And
1 _____ is way too high.

Technician 2: Hmm. That is a problem. It could put 2 _____
_____ on the pipes.

Technician 1: Exactly. But 3 _____ what the
cause of the problem is.

Technician 2: Did you check the driving force?

Technician 1: Yes. The pump is set at the 4 _____
_____.

Technician 2: Well, obviously, 5 _____ the rate
of movement.

Technician 1: And it wouldn't be a leak 6 _____.
Those would have the opposite effect.

Speaking

8 With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

I'm a little worried about ...

Did you check ...?

Didn't we ...?

Student A: You are a technician.
Talk to Student B about:

- a problem with a rate process
- how you identified the problem
- a possible solution to the problem

Student B: You are a technician.
Talk to Student A about a
problem with a rate process.

Writing

9 Use the conversation from Task 8 to complete the maintenance report.

Maintenance Report

System:

Problem:

Actions Taken:

Resolution: