



# **Tailgate Talk**

## **Lessons Learned:**

### **Drain Trap Design Error at Rocky Mountain Rail Park**

#### **Purpose**

To explain a design error involving S-traps in plant drain systems, the field impacts that followed, and the corrective actions that will prevent recurrence on future projects.

#### **Overview of the Scenario**

At the Rocky Mountain Rail Park project, the plant drain system was designed with S-traps. The project specification required P-traps, which provide a more reliable water seal and prevent unwanted air movement, odors, and sewer gas intrusion. Because the design did not match the required configuration, the field services team had to identify the discrepancy, remove the S-traps, and modify the drain piping to accommodate the correct P-traps.

#### **What Happened**

The original design package showed S-traps for the plant drains. This conflicted with the scope requirements, which clearly called for P-traps. The inconsistency was not caught during the design review phase. Once construction was underway, the field team discovered the issue when the drain assemblies could not be installed as drawn.

#### **Why It Became a Problem**

S-traps are not approved for this type of installation. They do not hold a consistent water seal, which can create a vacuum effect that pulls the seal dry. This failure mode can allow air or gas movement back into the system and does not meet modern standards for process plant drainage. Installing the correct P-traps required unplanned field rework, additional materials, and considerable labor hours that were not included in the project budget. The extra work also carried a risk of schedule impact.

#### **Resolution**

Field Services resolved the problem by removing the incorrect S-trap configuration, rerouting piping, and installing P-traps in accordance with the project requirements. Although the corrective work was successful, it represented avoidable cost and time.

#### **Preventive Measures**

Design teams must reference current design standards and project specifications to ensure all drain trap installations use P-traps. S-traps should be removed entirely from



future plant designs. All discipline reviews and internal design checks must include a specific verification that P-traps are specified and detailed correctly.

### Lesson Learned

P-traps will be required in all future designs. S-traps must no longer be used in IWS plant drainage systems. Verifying trap requirements during design review prevents rework, cost overruns, and schedule delays.

### Supervisor Discussion Points

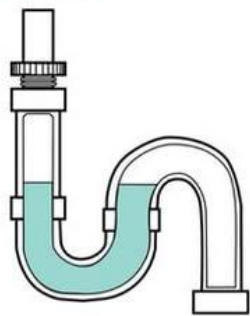
- How should design discrepancies be identified earlier in the project lifecycle
- What review steps can be added to prevent mismatches between drawings and scope
- How can field teams escalate design inconsistencies faster to limit rework

### Closing Reminder

Successful projects depend on accurate design packages that match the project requirements. Early identification of design deviations prevents unnecessary modifications in the field. Always verify that trap types and configurations comply with the project scope and current IWS standards.

## S-Trap vs. P-Trap

S-Trap



P-Trap

