

**HACCP Concepts
and
Development of Aquatic Invasive
Species Management Plans**

Presentation and Discussion

SRBC Water Quality Advisory Committee Meeting
May 25, 2010

Mark Hartle, PFBC
Jennifer Hoffman, SRBC

HACCP

- **Hazard Analysis Critical Control Point (HACCP)** is a systematic preventive approach to food safety and pharmaceutical safety that addresses physical, chemical, and biological hazards as a means of prevention rather than finished product inspection.

Source: Wikipedia

http://en.wikipedia.org/wiki/Hazard_Analysis_and_Critical_Control_Points

HACCP Principles

Principle 1: Conduct a hazard analysis

Principle 2: Identify critical control points. A

Critical Control Point (CCP) is a point, step, or procedure at which control can be applied and, as a result, establishment of aquatic invasives can be prevented, eliminated, (or reduced to an acceptable level)

Principle 3: Establish critical limits for each critical control point. Establish control at a critical control point to prevent, eliminate, or reduce to an acceptable level.

Principle 4: Establish critical control point monitoring requirements.

HACCP Principles

Principle 5: Establish corrective actions.

Actions to be taken when monitoring indicates a deviation from an established critical limit.

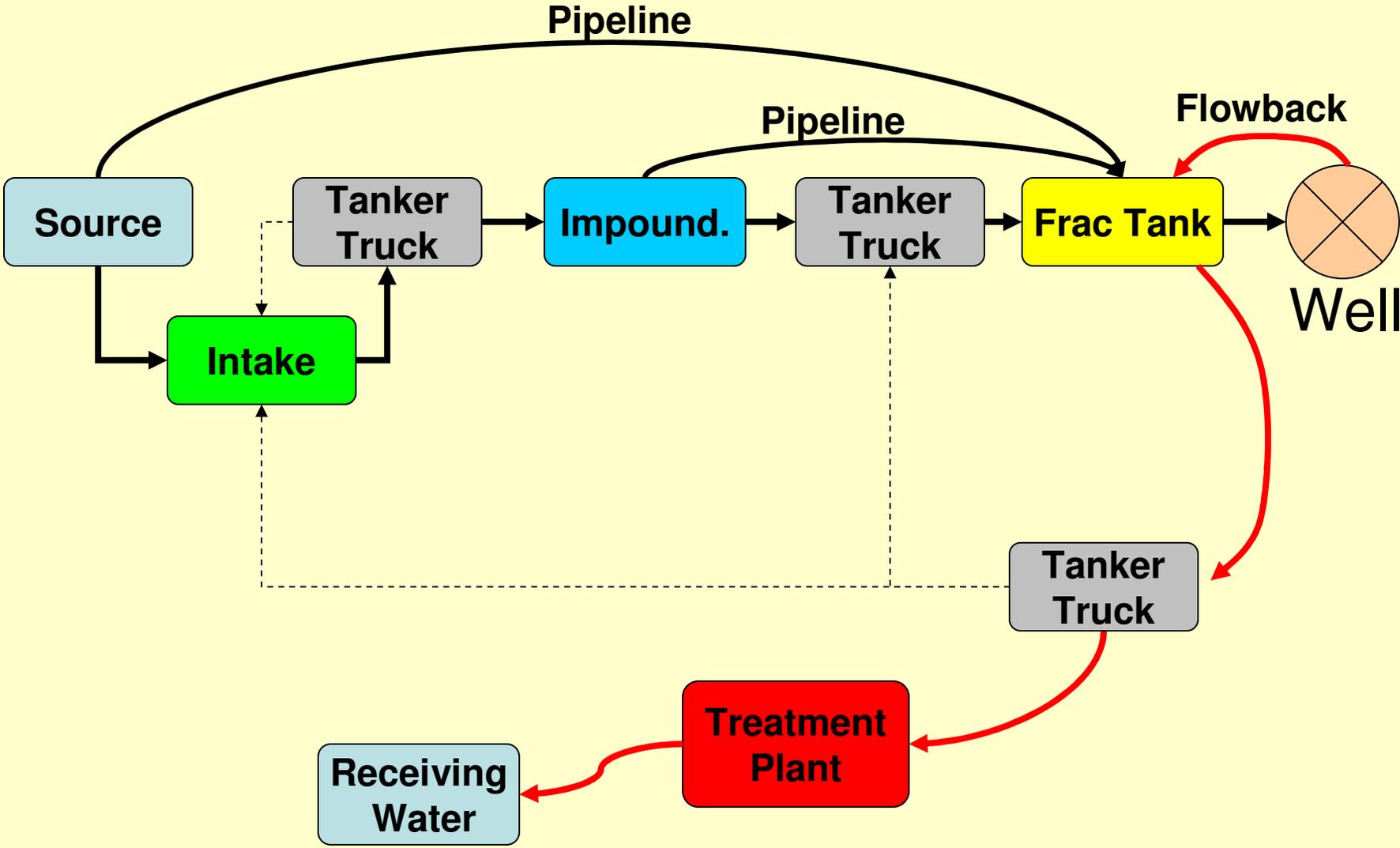
Principle 6: Establish record keeping

procedures. Requirement of industry to maintain documents, including its hazard analysis, Aq. Invasive Species Control Plan and records documenting monitoring of critical control points, verification and deviations.

Principle 7: Establish procedures for ensuring the HACCP system is working as intended.

Validation/inspection ensures that industry is following their own HACCP plans.

Marcellus Gas fluid handling process



AIS CCP #1 – Contaminated Source

- Critical Control Point risk
 - Potential spread of aquatic invasives where present in source water/watershed
- Control measure
 - Priority
 - Discuss
 - Local, regional or global in scope?

AIS CCP #2 – Incoming equipment

- Critical Control Point risk
 - Potential spread of AIS through use of contaminated equipment new to the job
- Control measure
 - Priority
 - Discuss
 - Local, regional or global in scope?

AIS CCP #3 – Transportation/Transmission

- Critical Control Point risk
 - Potential spread of AIS through leakage or discharge of water during transportation
- Control measure
 - Priority
 - Discuss
 - Local, regional or global in scope?

AIS CCP #4 – Cross contamination

- Critical Control Point risk
 - Potential transfer & distribution of AIS through cross contamination of equipment
- Control measure
 - Priority
 - Discuss
 - Local, regional or global in scope?

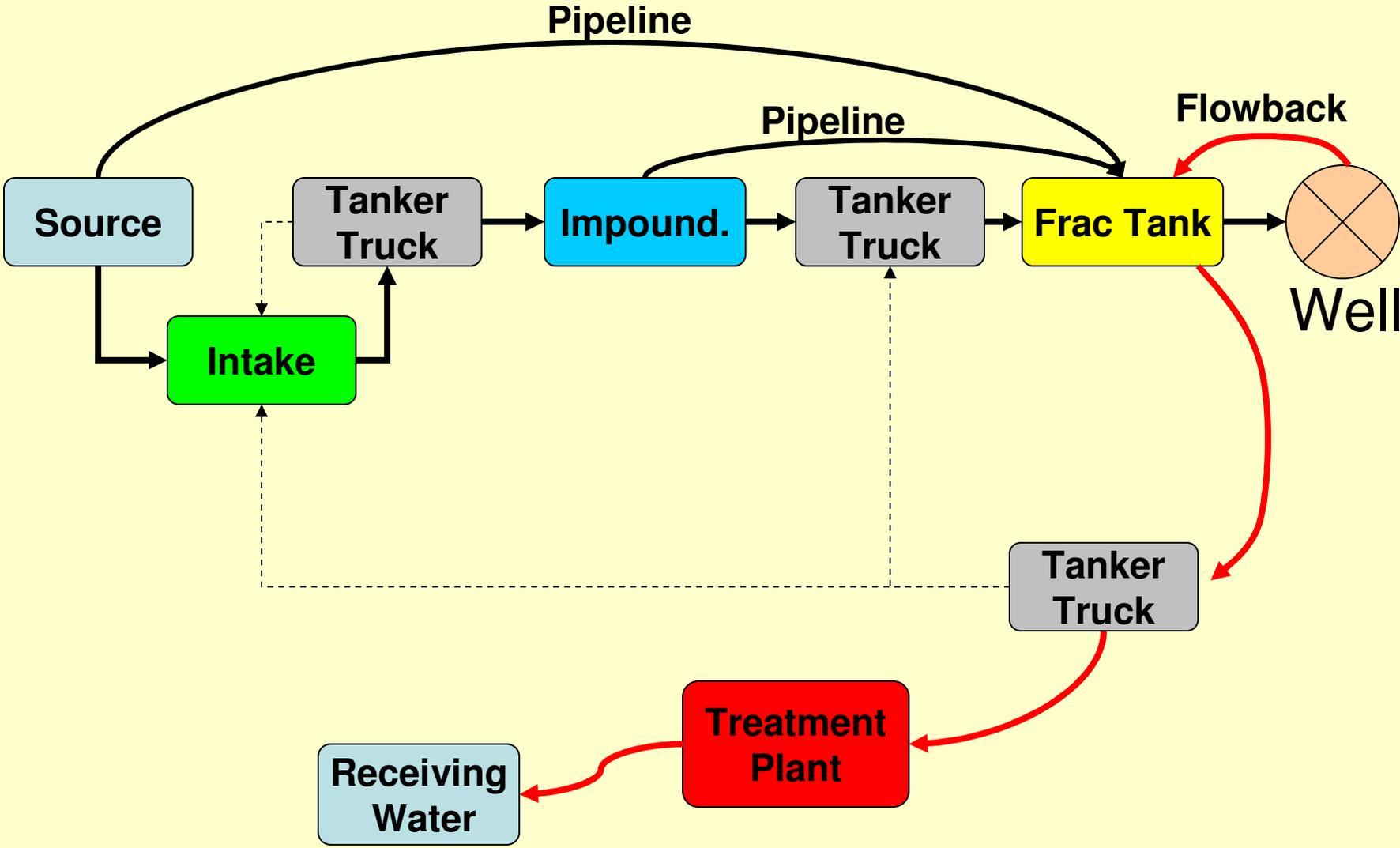
AIS CCP #5 - Storage

- Critical Control Point risk
 - Potential spread of AIS from contaminated stored water
- Control measure
 - Priority
 - Discuss
 - Local, regional or global in scope?

AIS CCP #6 – Disposal

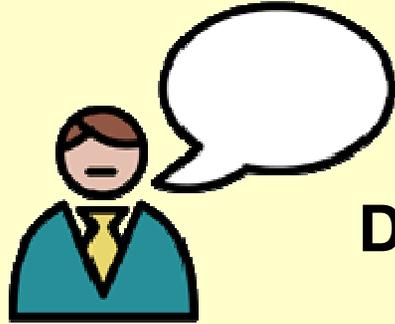
- Critical Control Point risks
 - Potential spread of AIS through disposal of contaminated waste
 - Creation of conditions favorable for AIS through waste disposal (e.g. elevated Cl⁻)
- Control measure
 - Priority
 - Discuss
 - Local, regional or global in scope?

Marcellus Gas fluid handling process



CCP Control Measures Discussion

...use worksheet as a guide...



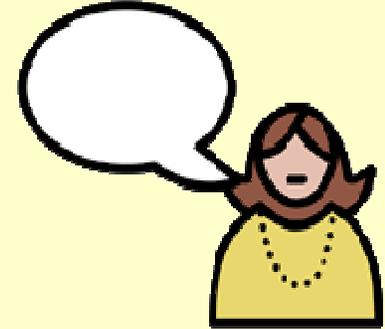
Critical Control Points

Discuss

Priority

Control measures

Scope (local, regional, basin)



1. Contaminated source
2. Incoming equipment
3. Transportation/transmission
4. Cross contamination
5. Storage
6. Disposal
7. Other ?