ESSENTIALS OF SURFACE WATER TREATMENT TRAINING

Exercise #2: Proper sampling locations in a treatment plant for turbidity, chlorine residual, and TOC

Directions: Mark on the diagrams the proper sampling locations in a treatment plant for all of the following:
- Raw turbidity
- Individual filter effluent turbidity (IFE)
- Combined filter effluent turbidity (CFE)
- Chlorine residual
- Raw TOC & alkalinity
- Filtered TOC

![Diagram of water treatment plant with marked sampling locations]

Source water

Sodium hypochlorite
Alum
Polymer capability

Rapid mix

Flow

Flocculation Basin
Sedimentation Basins

Backwash settling lagoon

Transfer pump (up to filters)

Sodium hypochlorite
Polymer capability
Alum capability to recreate floc if needed

Rapid sand filter #1
Rapid sand filter #2

Sodium hypochlorite capability

5 MG Clearwell

To distribution system
- Raw turbidity
- Individual filter effluent turbidity (IFE)
- Combined filter effluent turbidity (CFE)
- Chlorine residual
- Raw TOC & alkalinity
- Filtered TOC

**Diagram Description:**
- **1400 gallon buffer tank** (wet well for booster pumps)
  - (2) 15 hp variable speed VT booster pumps
  - Sodium hypochlorite
  - Soda ash
  - 12” pipe from river to wet well
  - (2) 5 hp VT booster pumps lead/lag, 250 gpm each
- **Filter skid 1:**
  - 125 gpm max
  - Basket strainer w/ auto backwash
- **Filter skid 2:**
  - 125 gpm max
- **72” x 150’ pipe used for contact time**
- To distribution system