

**ADEQ – Groundwater Protection (GWP) and Surface Water Protection (SWP)  
Operator Certification Program Training Presentation Outline**

**1. Regulatory Review - Pertinent Regulations [e.g., Aquifer Protection Permit (APP) and Arizona Pollutant Discharge Elimination System (AZPDES)] – 45 min**

- History of each program.
- When does APP or an AZPDES apply.
- Typical Parameters in each permit and typical limits.
- Monitoring Compliance Point (e.g., outfall of pipe)
- Real world examples of APP and AZPDES Permits

**2. Wastewater Treatment Operations and Maintenance – 1 hour**

Plant Description (show a diagram) (operation)

- Collection System
- Preliminary Treatment
- Primary Treatment
- Secondary Treatment (activated sludge, trickling filters, RBCs, Package Plants, ponds)
- Tertiary Treatment
- Advanced Treatment
- Disinfection
- Solids Handling
  - Anaerobic Digestion
  - Aerobic Digestion
  - Sludge Handling and Disposal

Maintenance

- Types of Maintenance
- Pumps (types)
- Motors (types, lubricants, name plate data)
- Valves
- Flowmeters
- Sensors
- Electrical

**3. Water Quality Sampling and Field-Testing Safety – 1 hour**

- Purpose (Process control/Regulatory-NPDES)
- Water Quality Parameters (process control)
- Water Quality Parameters (NPDES) Primary/Secondary Standards
- Manual Sampling/Composite Sampling
- Field Parameters (pH, Turbidity, Temperature, Dissolved Oxygen)
- Field Instrument Calibration/field instrument operation
- Safety (Field/Lab Hazards)

**4. Laboratory Analytical Methods – 1 hour**

- Process Control (BOD/COD, Solids, Nitrogen, Alkalinity, Settleability, SVI, MLVSS)
- Regulatory Compliance (NPDES Permit)
- Sampling Plan/QA/QC, Chain of Custody, Preservation/Holding Times (40CFR, Part 136)
- Lab Analysis (Why we do it)
  - Gravimetric Analysis
    - Solids
    - Total Solids (TS)
    - Settleable Solids
    - Suspended Solids (TSS)
    - Volatile/Fixed Solids
    - Total Dissolved Solids (TDS)
    - Oil/Grease
  - Titration
    - Acidity/Alkalinity
    - Chlorine Residual
    - BOD/COD
  - Colorimetry
    - Metals
    - Nitrogen (TKN, Nitrite/Nitrates)
  - Microscopy

- Bacteria (Total Coliforms/Fecal Coliforms)
- IDEXX Method

**5. Regulatory Reporting: myDEQ modules, Self-Monitoring Reporting Form (SMRF's) DMR's Contingency Reporting, Non-Compliance Reporting – 1 hour**

- What is myDEQ?
- SMRF/DMRs (What are they?)
- Requirements
- Due Dates
- Common Reporting Errors

**6. Permitting Basics (APP and AZPDES) - 45 min**

- APP – Definitions & what it means
  - General Provisions
    - General Definitions
    - Public Process
  - Individual Permits Requirements
  - General Permits Requirement
- AZPDES
  - General and Permit Coverage Requirements and Deadlines
  - AZPDES Program Standards
  - Public Process
- Biosolids Disposal Permitting Requirements

**7. Funding Sources – 45 min**

- WIFIA – Water Infrastructure Finance and Innovation Act
- Arizona Water Infrastructure Finance Authority
  - Clean Water SRF – State Revolving Fund
- Municipal Bonds
- Rate Studies/Rate Increases