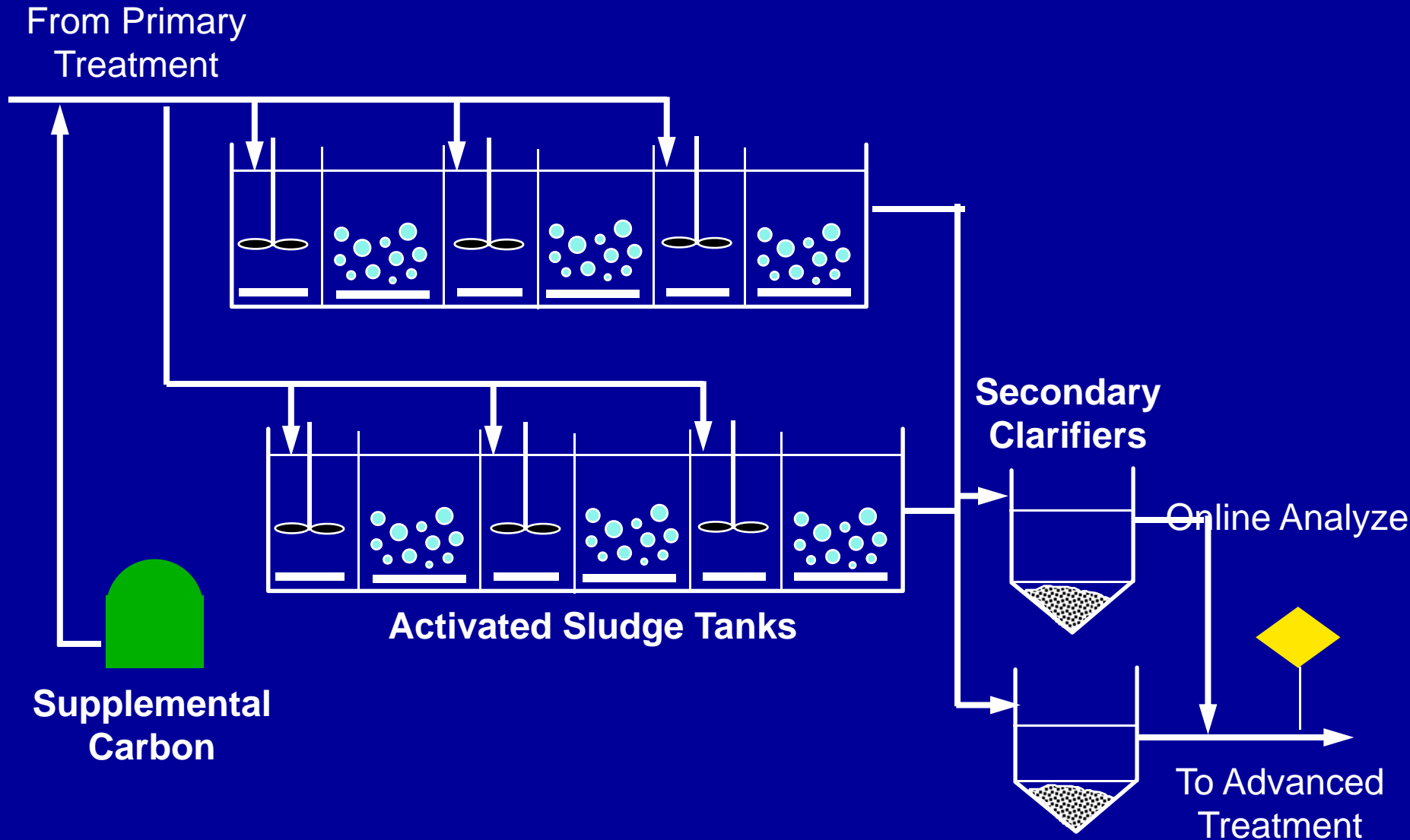


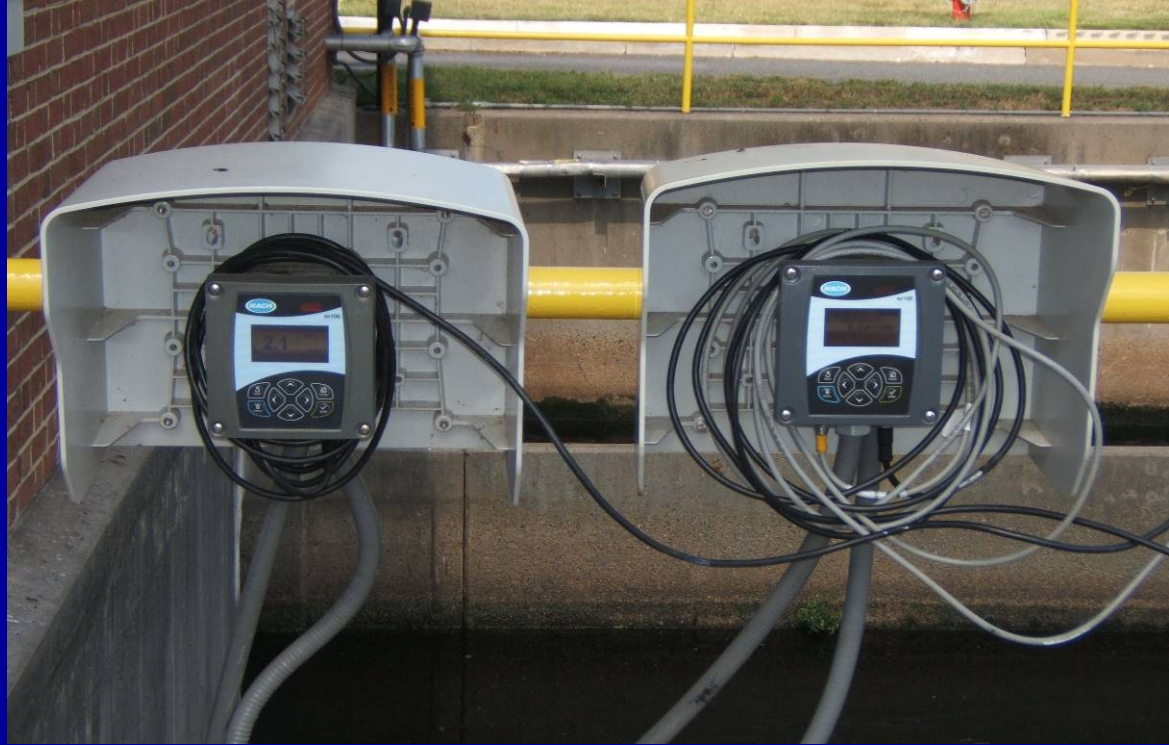
Fairfax County Nitrogen Analyzer Experience

Roger Silverio, Phil Ballard & Mike
McGrath

Secondary Treatment Schematic



Installation



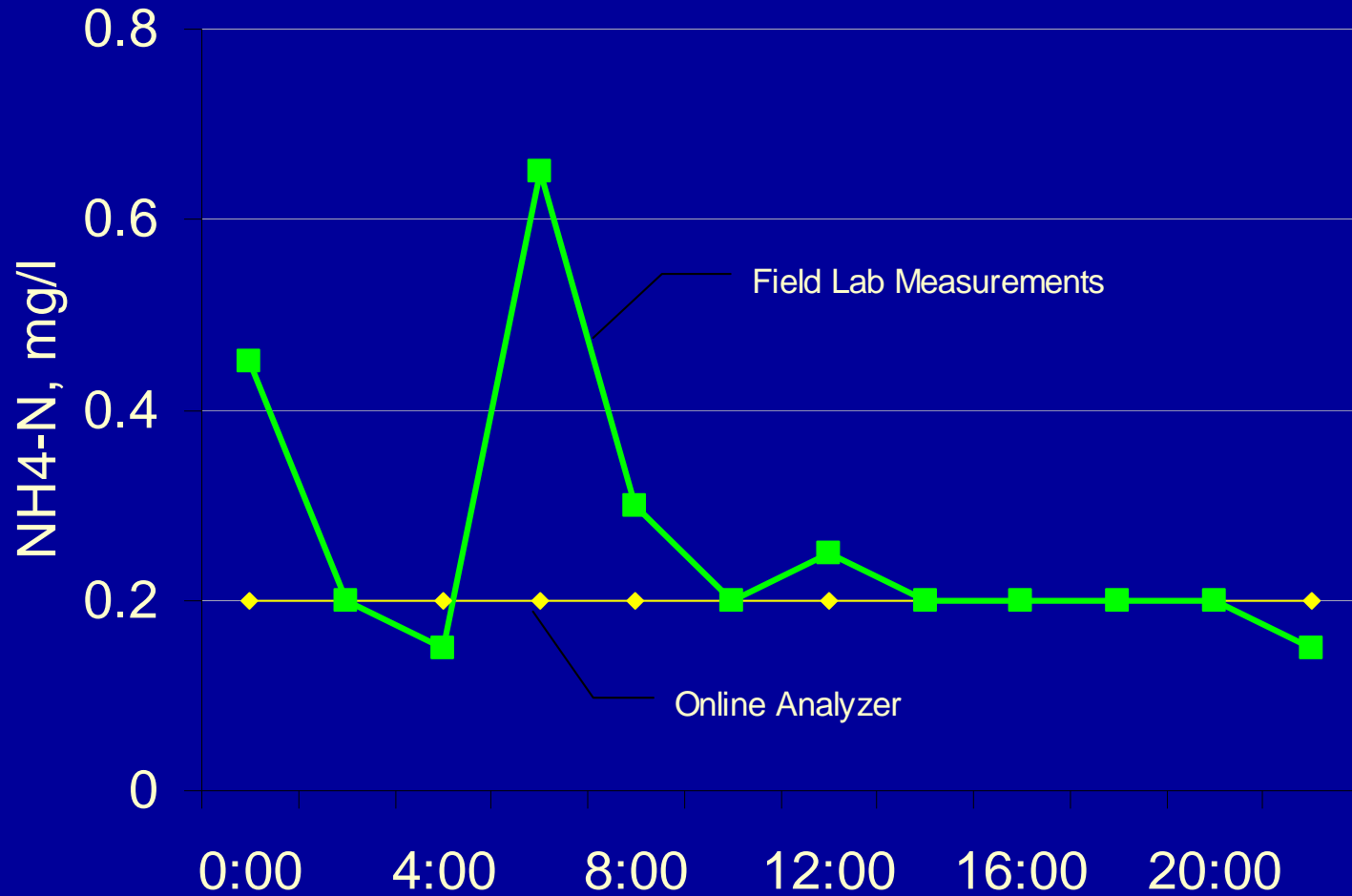
Ammonia

- Permit Limit
 - Summer: 1/1.5 mg/L
 - Winter: 2.2/2.7 mg/L
- Past Strategy
 - 4 grab samples a day
 - Field lab analysis
 - Early warning





Hach NH4D SC Ammonia Analyzer



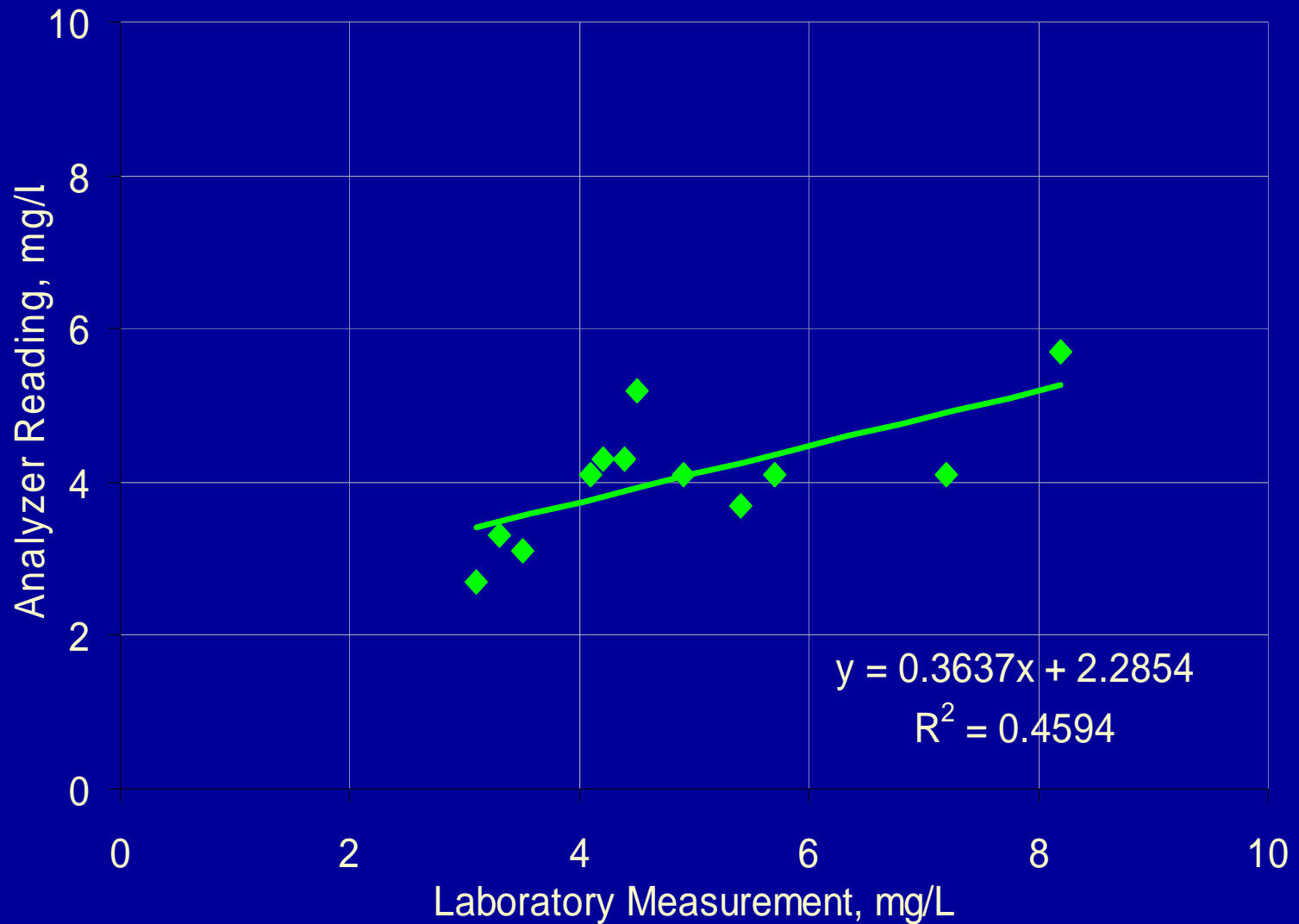
Nitrate Nitrogen

- No Permit Limit
 - Future annual average TN of 8 or 7 or 5 mg/L
- Past Strategy
 - 4 grab samples a day
 - Field lab analysis
 - Examine long term trends

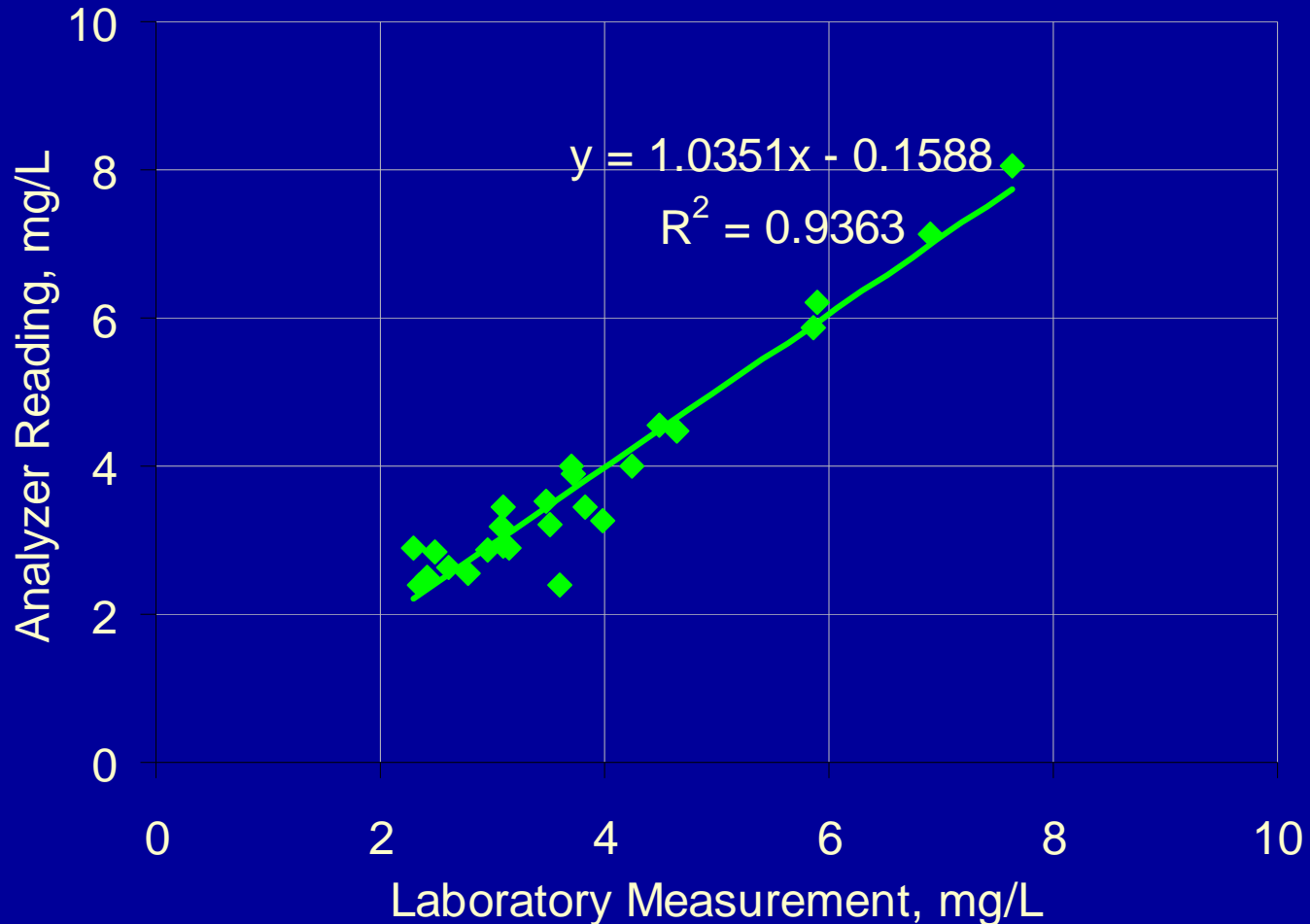




Hach Nitratax Plus SC 2mm Analyzer



Secondary Effluent Installation Results



Benefits

- Quicker warning of ammonia problems
- Investigate Daily TN Bump
 - Diversion
 - Flow distribution
 - Aeration pattern and DO control
 - Carbon dosing
- Less operator effort at night

Future Steps

- Find more reliable & accurate ammonia analyzers
- Position upstream for quicker response and feed forward control