What’s the deal with E coli – Part one

- RT Krueger President
- Northern Lake Service, Inc
- WWOA 55th Annual Conference
- October 8th, 2021
How we got here

• Clean Water act
• Bacterial component
• Use of fecal coliform
What is fecal coliform

- Total coliform – gram-negative rods
- Fecal coliforms – coliforms that can tolerate high temps .... associated with warm blooded animals
- E coli – a “species” of fecal coliform strongly associated with the feces of warm-blooded animals
Fecal coliform - Traditional methods

• Filter method
• Easy and inexpensive
• Filter, incubate, count
• .... Direct count
Why change to E coli?

- Recommendations since the mid 1980s to do something different
- Presence of fecal coliform is an indicator of contamination by feces from warm blooded animals but
- Not necessarily a strong correlation with bacterially-related illness
....Do WHAT different?

- Use E. coli
- Filtration
- Requires additional steps
- Not very productive
New spin – enzymatic substrate

• Developed for drinking water
• Three components
• Easy and inexpensive for drinking water
• Easy but not so inexpensive for wastewater
WW must quantitate
New filtration methods

• Concept similar to previous
Concerns and Considerations

• How can E. coli results be higher than coliform?
• They can’t, but....
• Physical considerations
• Mathematical considerations
• Biological considerations
• Matrix considerations
Olstadt – A Comparison of Ten EPA Approved Methods for Coliform and E. coli
QUESTIONS?