

You Think Your System is Protected....

Not From The Impending Threat of

Dishwashers

Full Service Restaurant FOG Sources

Mop Sink
4%

Pre-Rinse Sink
Ahead of Dishwasher
40%

Dishwasher
5%

Food Prep
Sink
3%

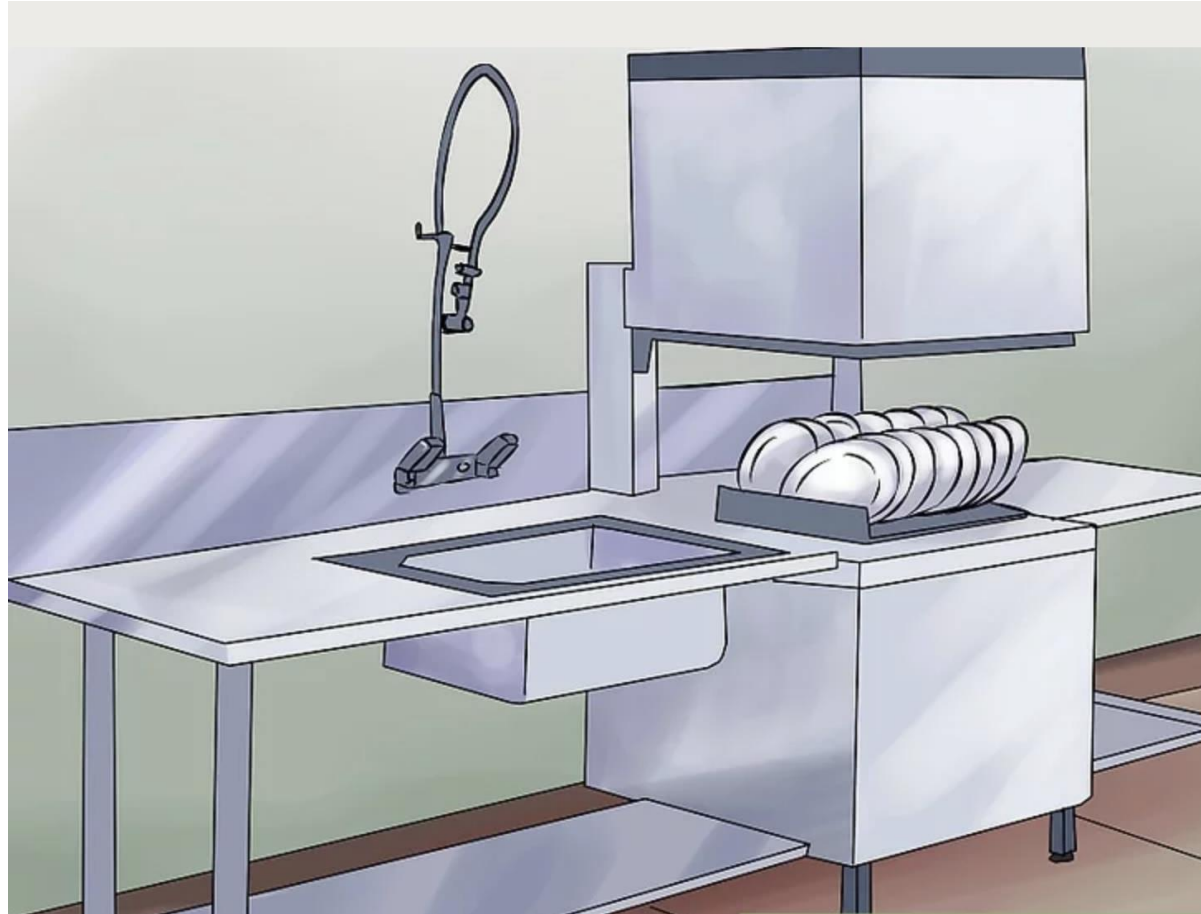
3 Compartment Pot
Washing Sink
45%

Floor Drains
3%





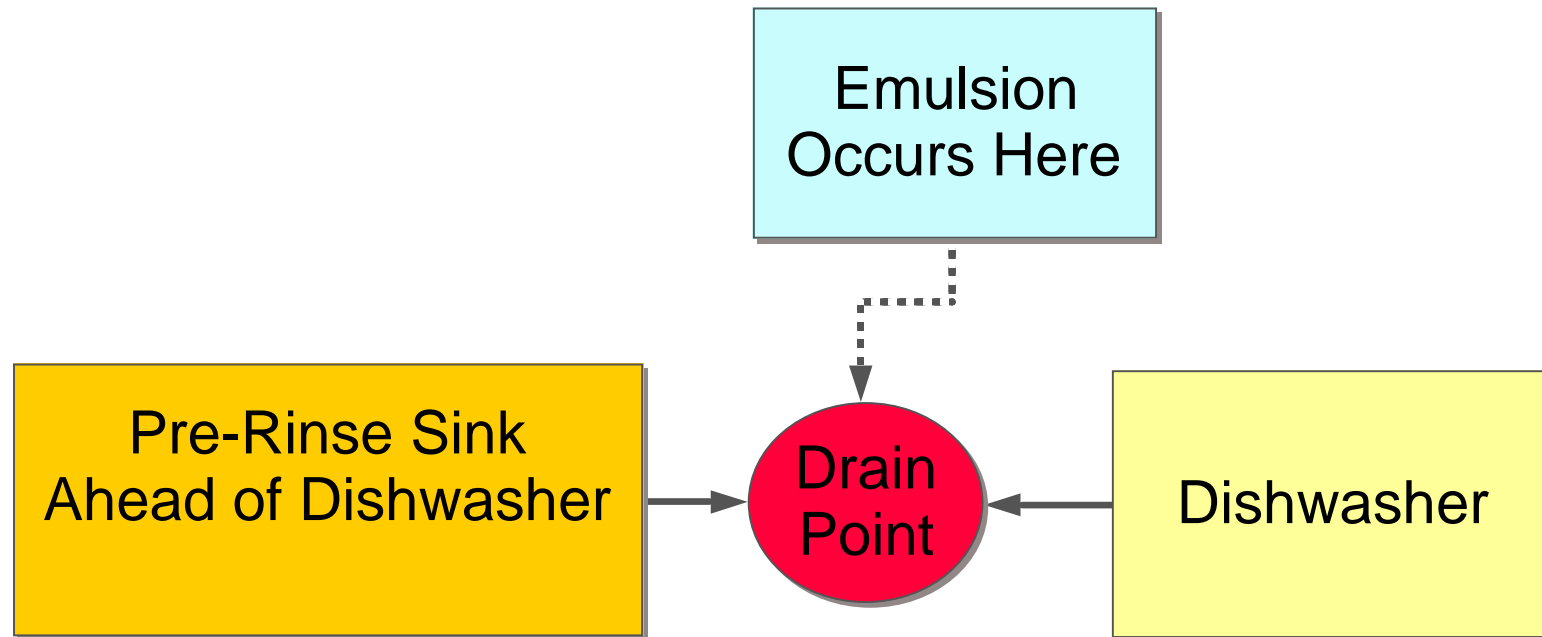
Pre-Rinse Sink and Dishwasher Arrangement



Typical Pre-Rinse Sink & Dishwasher



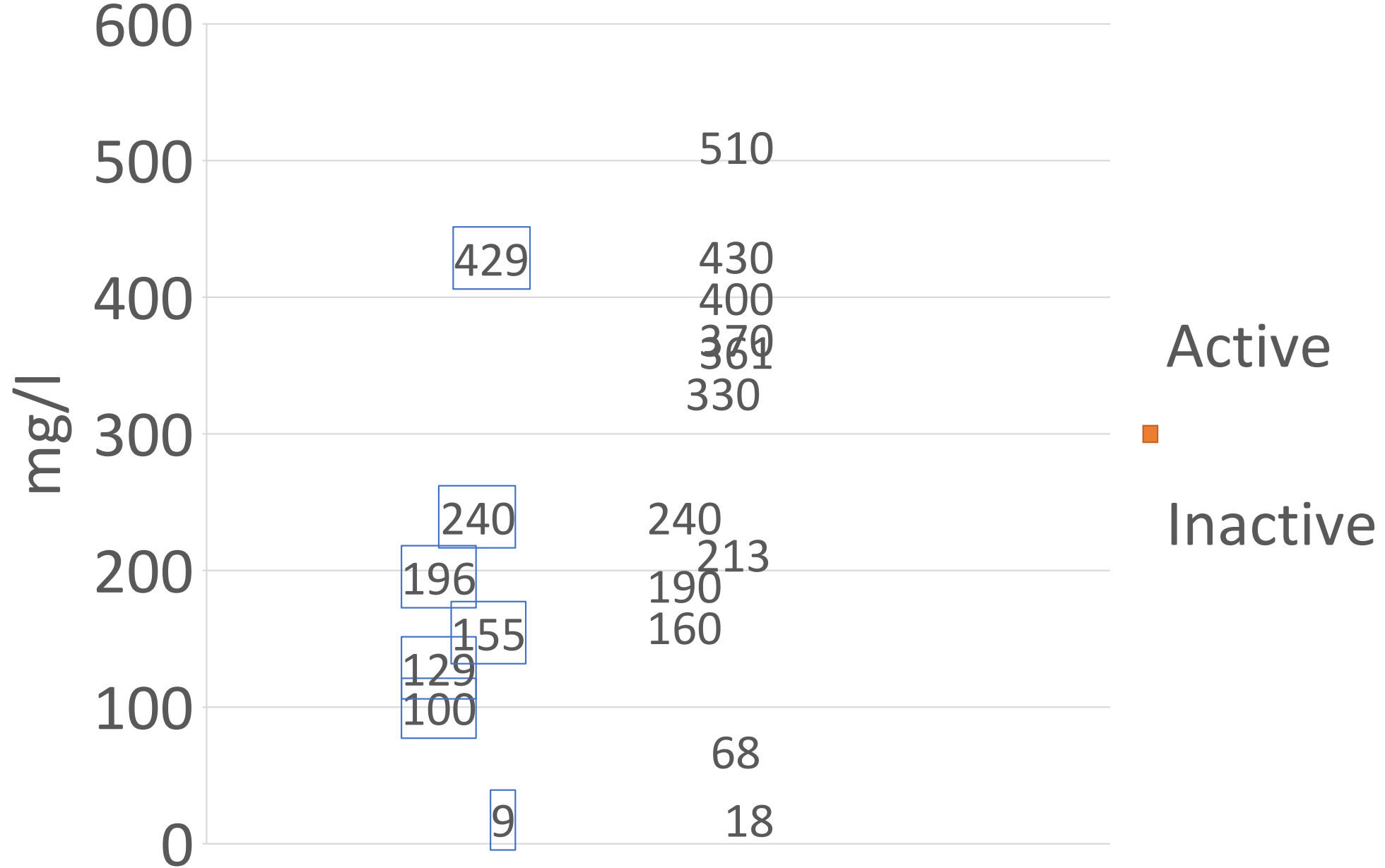
Oils + Detergent + Hot Water = FOG Emulsion



Active Mode Explained

- PRS drain water **not allowed to mix with dishwasher flow when dishwasher was operating**
- PRS drain water **released when dishwasher was not operating**
- PRS = Pre-Rinse Sink

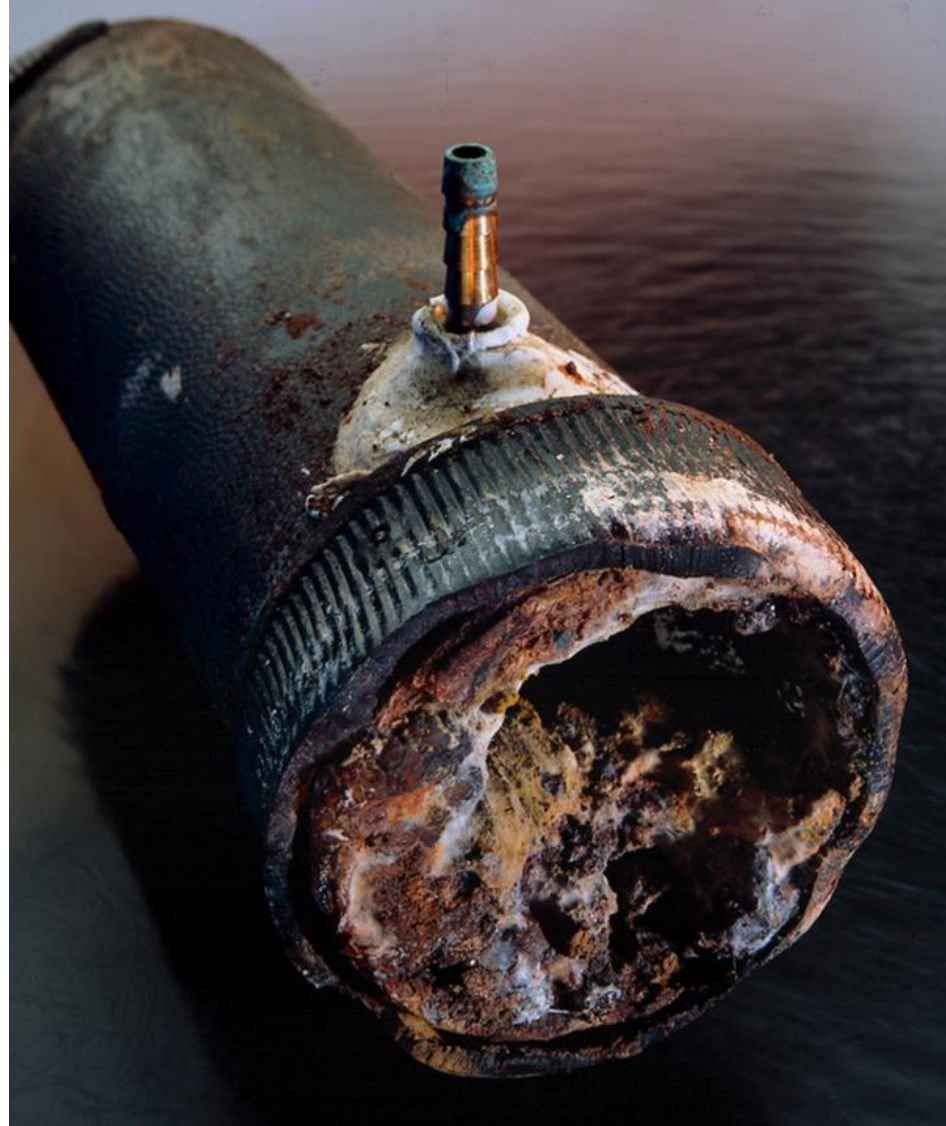
Active vs Inactive Emulsion Management



No Other Changes Made at Site

- 27.2% Effluent FOG Reduction with Active Pre-Rinse Management
- Samples Taken From Sample Port After Restaurant Interceptor
- No changes to BMPs.
- Interceptor Pumped 2X month
- Evaluation Period Spanned Two Months
- Alternating Active and Inactive Weeks

Why Does This Happen?

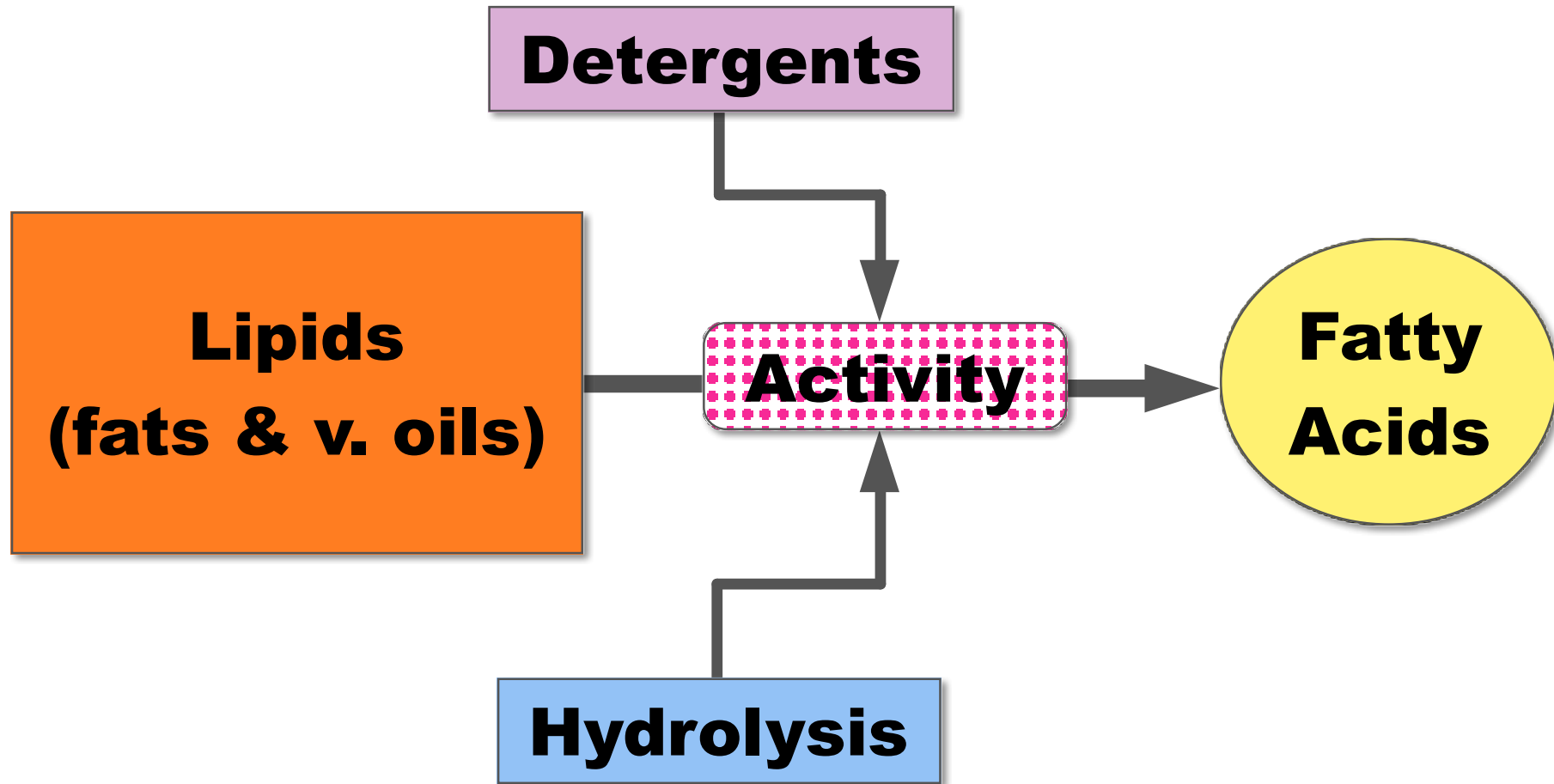


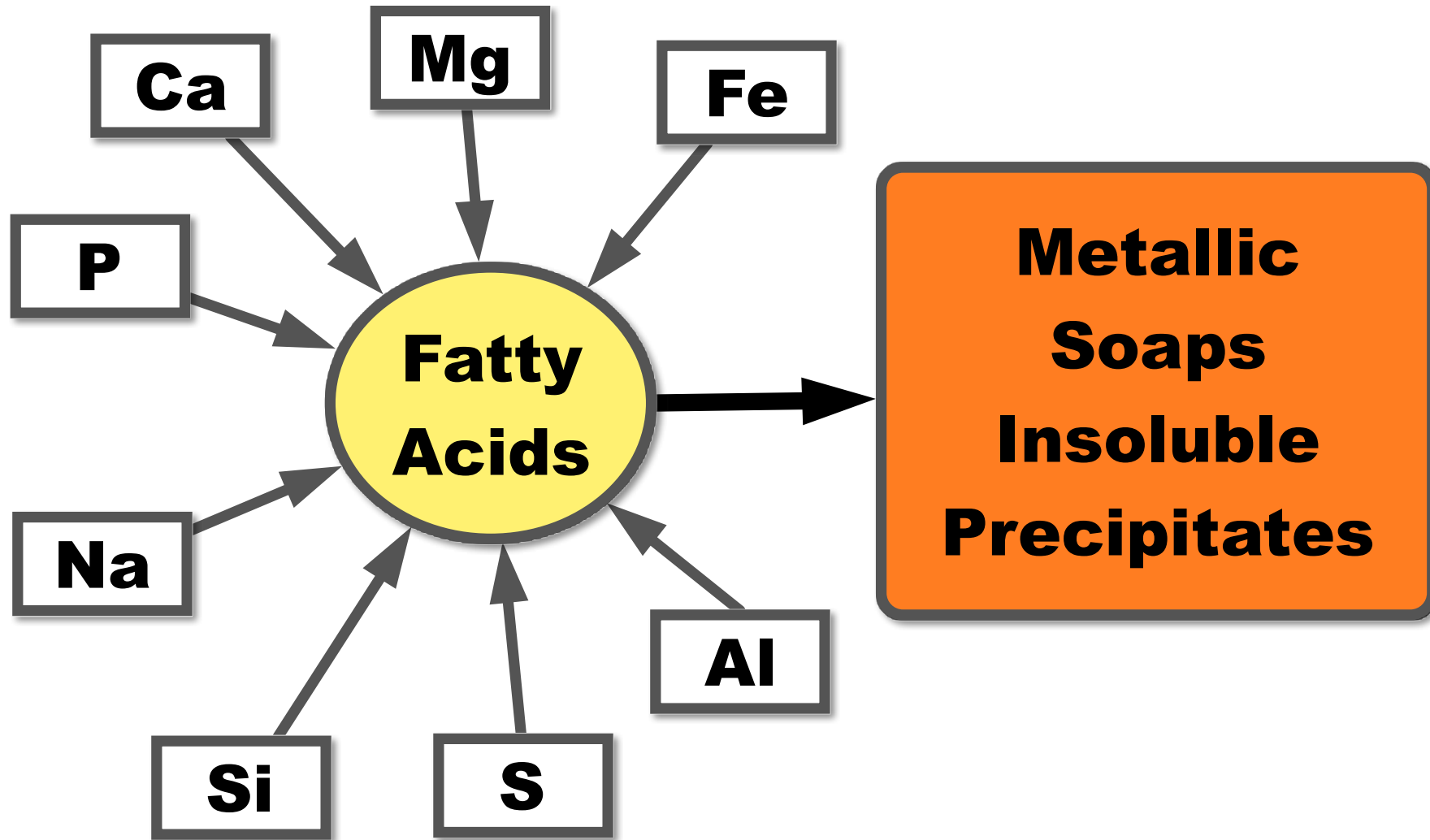
WERF Study 2008

Dr. Joel Ducoste

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N. C. State University





QSR Historical Situation (Quick Serve Restaurants)

Mop Sink

5%

3 Compartment Sink

90%

Floor Drains

5%

QSR Happening Now Everywhere

Mop Sink
5%

Automatic Dishwasher
90%

Floor Drains
5%

Should We Be Concerned?

- 3000 Chick-fil-A and 4000 Wendy's Converted to Dishwashers in 2018
- Automation of QSR ware washing = high emulsified FOG loadings
- Outside separators powerless against automatic dishwashers
- Will Sanitary Districts HAVE to implement Effluent Sampling?
- WERF Study says fatty acids + Metal Ions = Pipe Deposits
- Will higher level of emulsified fats create fatty acids in route to WWTP?