

697 < H` H97 < B = 75 @` HF 5 = B = B ;`

7 c i f g Y` 7 c b h Y b h

h

H] h` \f. i XY` C] ` ` 8 Y g U` h] b[

D c h Y b h] U % * D 87 < c. XY 6 H H S (&

8 Y g W f] d h] c b .

H\Y` XYgU`h]b[`cZ` Wf i XY`c] ` `] g` U` d f c WYgg` h\Uh` XcYg` b
h\Y`acXYfb`dYhfc`Yi a`fYZ] bYfm" ` 8YgU`hYfg`dfcj] XY`ac
ch\Yf`g] b[`Y`d] YWY`cZ`dfcWYgg` \UfXkUfY" ` H\] g`dfc[f U
h\Y`Ufh`UbX`gW] YbWY`cZ`Wf i XY`c] ` ` XYgU`h] b[" ` AU] bhU]
Vch\`Wf] h] WU` `m`] adcf hUbh`UbX`ei] hY`X] ZZ] Wi`h" ` G] bW
XYgU`hYf`cdYfUh] cb` ai gh` WcbghUbh`m` VY`UX^i ghYX`hc`a
gci f WYg`cZ`Wf i XY`c] ` "

H\Y`dfc[f UaDg` WcbhYbh`] g` Vch\` WcadfY\Ybg] j Y`UbX`k] X
Zi bXUaYbhU`g`cZ`h\Y`XYgU`h] b[`dfcWYgg`] bW i X] b[`Wf i
Ye i] daYbhž` j Uf] ci g`XYg] [b`cdh] cbg`UbX`aU^cf`dfcWYgg
X] gWi gg] cb`acj Yg`] bhc`h\Y`hcd] Wg`cZ`i b] h`cdYfUh] cbg
Yl dYf] YbWYX` [fci d`cZ`] bXi ghf m`dfcZYgg] cbU`g` \ Ug` VYY

Ci h`] b Y.

69B9: = HG`C: ` 7FI 89`C = @` 89G5@H = B;
i ; YbYfU` `Cj Yfj] Yk
= AD57H`C: ` 7FI 89`C = @` EI 5@ = HM`CB` 89G5@H9F`D9F: CFA
i = bhfcXi Wh] cb`hc` 8YgU`h] b[
i 7fi XY`C] ` ` = adif] h] Yg. ` KUhYfž` GU`h`UbX`Gc`] Xg
i = adUWh`cZ`Cf[Ub] W`5W] Xgž`5gd\U`hYbYg
i 8YgU`h] b[` < YUj m` UbX` Cddcfhib] hm`7fi XYg
i HUb_U[Y`8Y\mXfUh] cb
: I B 85A9BH5@G`C: ` 9@97HF = 75@` 89G5@H = B;
i KUg\`KUhYf`5XX] h] cb
i FUhY`UbX`KUg\`KUhYf`EiU`] hm
i A]l] b[`#`7cbhUWh
i 7cU`YgWYbWY
i DYfZcf aUbWY`7cbhfc` `JUf] UV`Yg
i 8Y\mXfUh] cb`9ZZ] W] YbWm`j g" ` GU`h`FYacjU` `9ZZ]
HMD9G`C: ` 89G5@H = B; ` GMGH9AG
i G] b[`Y! GhU[Y`8Y\mXfUhcf
i G] b[`Y! GhU[Y`8YgU`hYf
i Hkc! GhU[Y`8YgU`hYf
i H\ fYY! GhU[Y`8YgU`hYf
i Hmd] WU` `CdYfUh] b[`7cbX] h] cbg`UbX`DYfZcf aUbWY
89G5@H9F`7CADCB9BHG

- Process Vessel
- Distribution System

Course Content

- Electrodes and Transactors
- Mud Wash

LEVEL CONTROLLERS

- Traditional, Microwave, Sonar, Radiation
- Radiation / Neutron Backscatter Devices Available

DESALTER DESIGN CONSIDERATIONS

- Vessel Size
- Number of Stages
- Transactor Size and Power Consumption
- Crude Properties

COMMERCIAL DESALTER DESIGNS

- Cameron
- Forum

FACTORS THAT AFFECT DESALTER OPERATION AND PERFORMANCE

- Crude Oil Feed Rate and Quality
- Temperature / Viscosity / Density Relationships
- Electrical Field Intensity
- Wash Water Rate, Quality and Flow Configuration
- Emulsion Formation (Pumps, Exchangers, Valves, Mixers)
- Control of Water Level and Emulsion Layers
- Demulsifier Technology and Addition Rate
- Mud Washing and Brine Recycle

TYPES OF DESALTING APPLICATIONS

- Heavy Crude Desalting
- FCC Feed Desalting
- Distillate Treating

DESALTER TROUBLESHOOTING

- Oily Effluent
- Poor Dehydration and/or Desalting
- Workshop

ECONOMIC IMPACT**Instructors:**

Tom Collins is President of NEET Corporation. He retired in 2019 as Vice President- Electrostatic Process at Forum Energy Technologies in Houston, Texas. His responsibilities have included technical sales, process review, desalter design, troubleshooting, training, optimization and business development. Tom started in the Technical Service Department at Petreco in 1980, servicing desalters worldwide. He spent his career in the field of desalting and has over 42 years experience in this area. Tom has authored and co-authored papers on desalting for the American Institute of Chemical Engineers, and has been active in the AFPM, formerly the NPRA, for over 30 years.

Sam Lordo is a recognized industry expert and has over 45 years' experience in refinery process chemistry/chemical treatments, opportunity crude processing and crude desalting. During his 45 years of corrosion / refining / petrochemical experience, he has been involved in all aspects of managing risk due changing crude slates and process conditions; including corrosion prevention, fouling prevention

and control, failure analysis, and crude desalting.

He also directed research and provided technical support to sites in the areas of:

- Desalting operations and chemical additive strategies \
- Aqueous corrosion control and chemical additive strategies
- Non-aqueous corrosion control strategies and risk assessments (eg., naphthenic acid, high temperature sulfidation)
- Fouling control strategies for various Refinery and Chemical Plant processes
- Antifoulant applications and treatment strategies
- Developed strategies to mitigate of risks due to various crude contaminants
- Sam worked as a member of a member of several multi-disciplinary teams that developed tools to assist refining sites in managing crude desalting, CDU overhead corrosion, non-aqueous erosion-corrosion, unit fouling, and opportunity crude processing. These efforts resulted in several software tools and key recommended practices to improve reliability and reduce integrity risk.
- Developed a number of Best Practices around chemical treatment

Sam has participated in the development of 4 patents.

Sam has been a member of NACE for >20 years, author of several papers on corrosion control, desalting, crude oil management. With NACE Sam participated in a number of Task Groups contributor.

Sam is active in Crude Oil Quality Association (COQA) and the Opportunity Crude Conferences presenting on a wide variety of topic regarding crude oil processing. He is an active member of and American Fuels and Petrochemical Manufacturers (AFPM). At AFPM was a member of the 2002 AFPM Q&A Panel, worked on the screening committee (>20 years) and received the 2016 AFPM Lifetime Achievement Award.

Education: University of Missouri Columbia, BS Chemical Engineering