



# The Practical Application of Tracer Gas Leak Detection for Air Cooled Condensers

ACC Users Group  
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# Tracer Gas Leak Detection

## Focusing On:

- Equipment / Sample Set-up
- Air in-leakage indicators
- ACC specific challenges



# Inspections / Methodology

- Routine / Annual / Commissioning
- Before and/or after outage
- High backpressure, dissolved O<sub>2</sub>, Continuous use of hogger
- Advantages of using helium as a tracer gas over other methods



# Helium Mass Spec





# Analyzer

## Analyzer Set-Up in Vehicle





# Off-Gas Measurement







# Rotometer





# ACC / Maalaea







# Pipeline





# Pipeline









# Debris







# High Pressure Seal







# Gland Seal Drain / Trap





# Crossover Bellows Leak





$\frac{1}{4}$ " Crack





# Leakage Back Through Hogger Exhaust when Isolated







# Leak Under Insulation







# Insulation Removed





WOW!





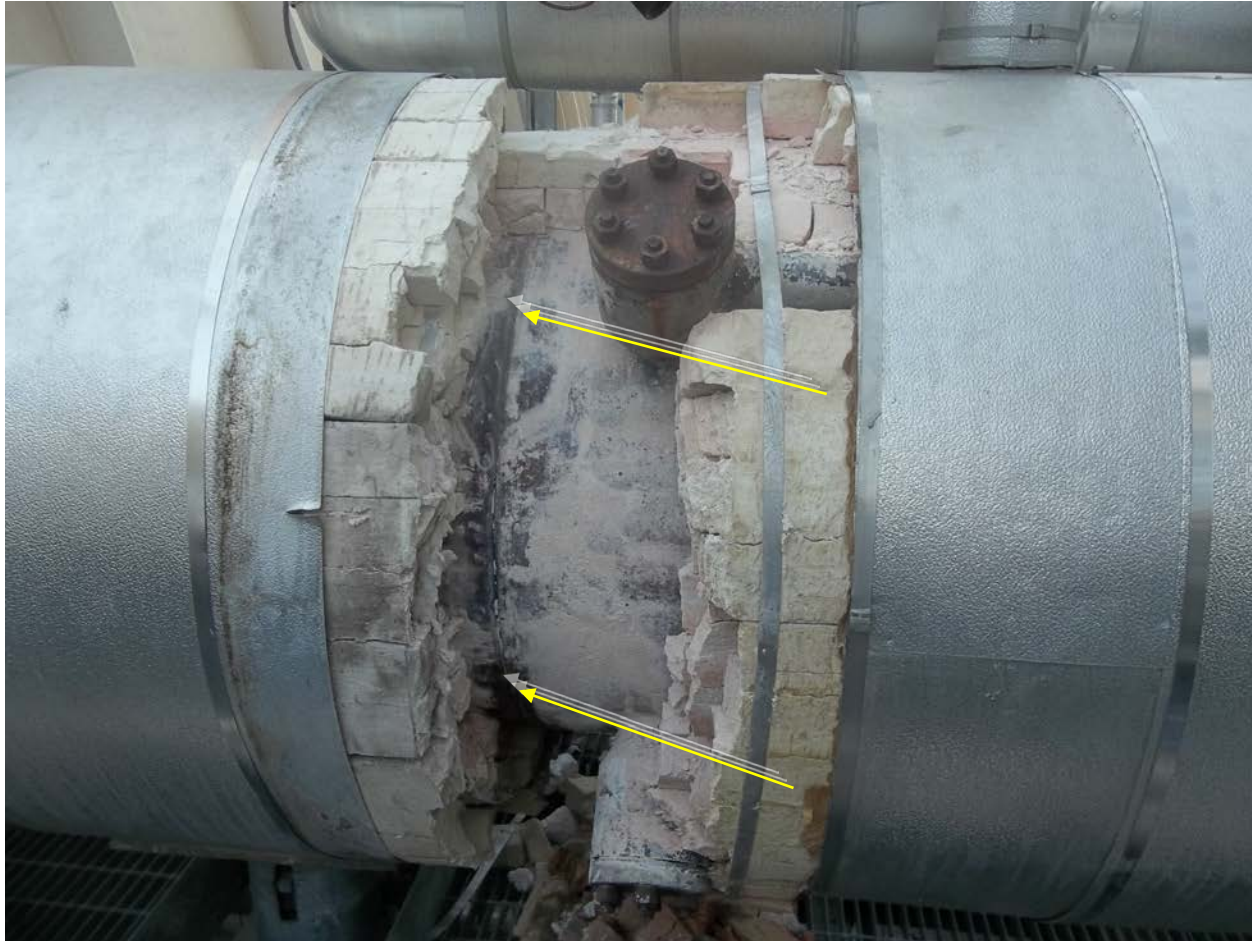
# Bypass Leak







# Circumferential Crack





# Circumferential Crack









# Base Weld Leaks





# Top of Tube Leaks







# First Tube Weld Leaks on Either Side of Bundle Welds - Left





# First Tube Weld Leaks on Either Side of Bundle Welds - Right







# Extensions





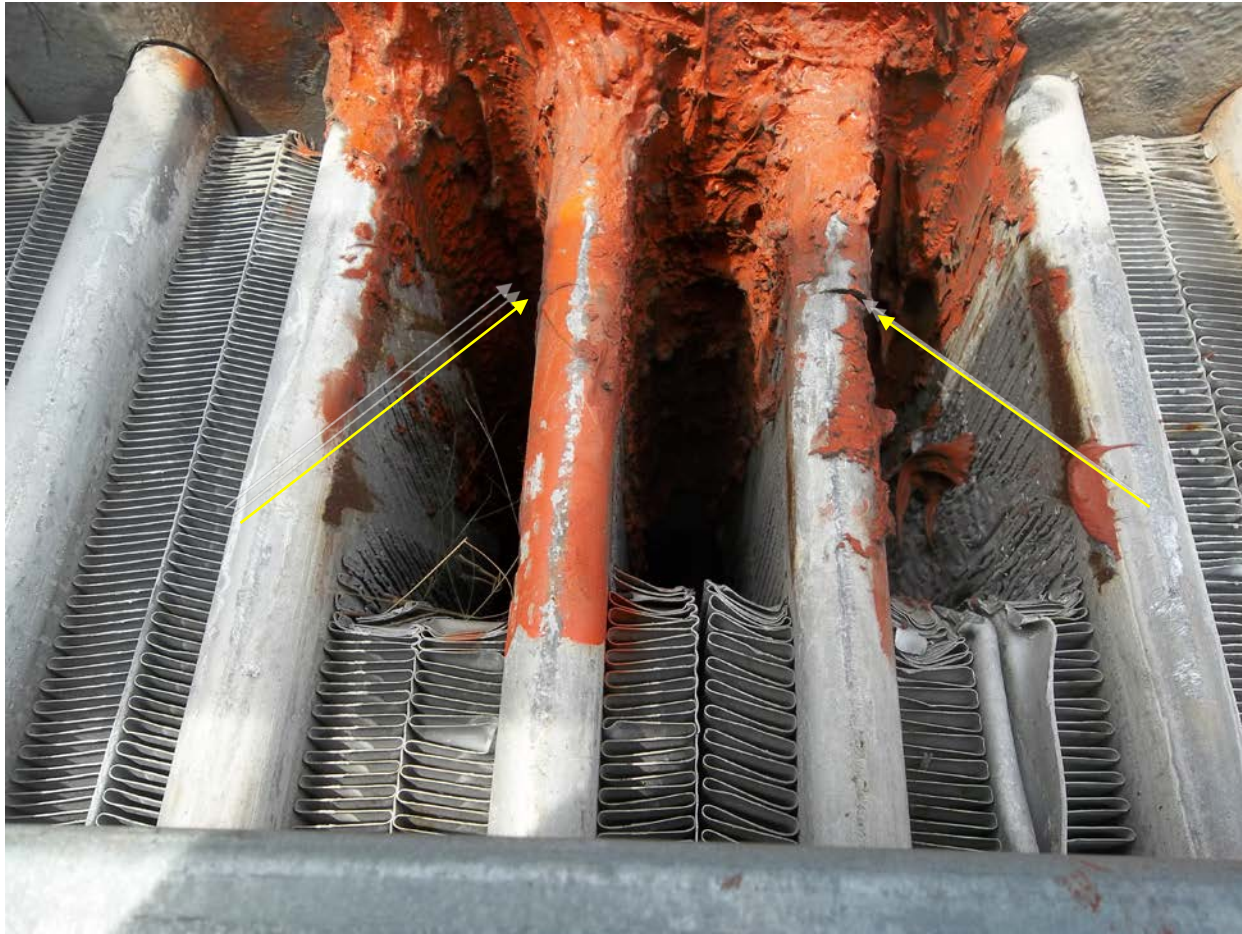
# Extensions







# Stress Cracking After Temporary Repairs







# Cut Outs





# 6" Weld Crack





# Lots of Possibilities







# Leak Location





# Pinhole Leak





# Fan Room Shooting







# Tube Leak and Weld Leak





# Duct Weld Leak





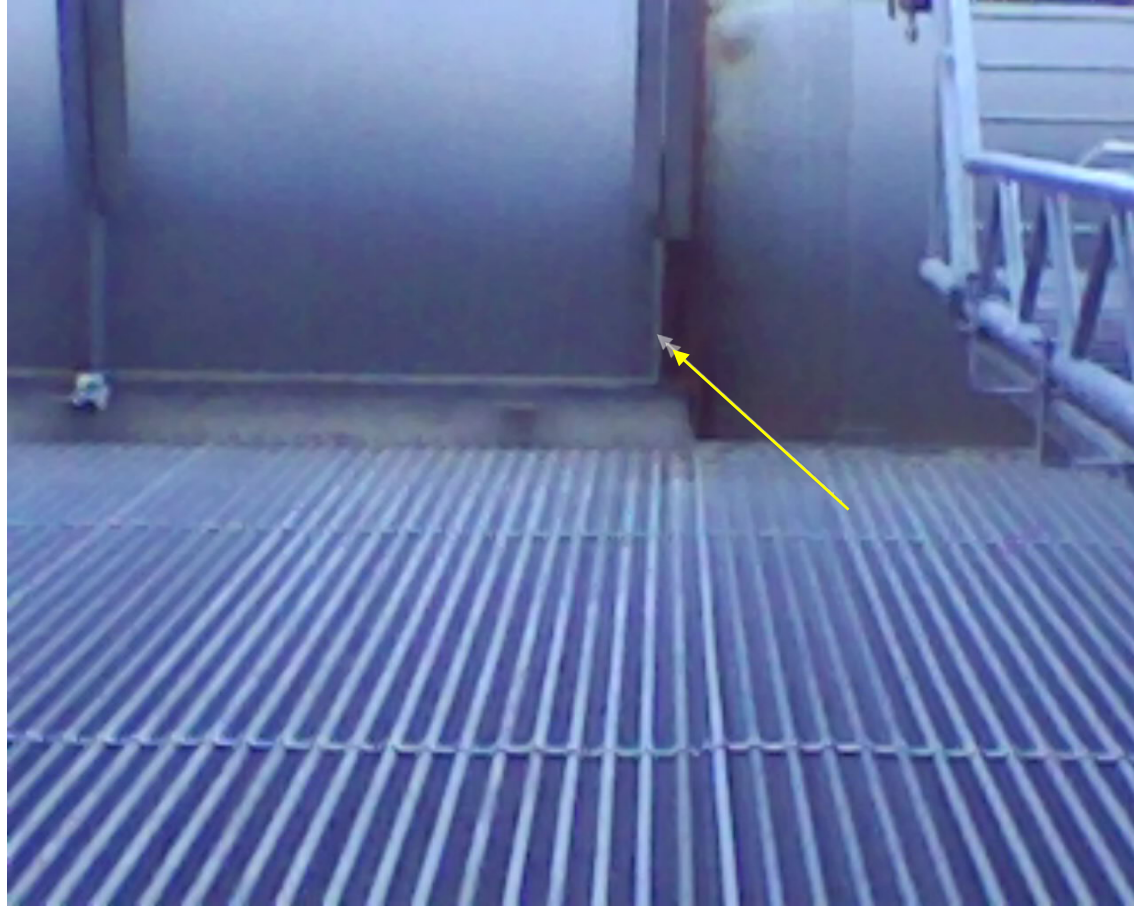
# Rupture Disc Leak







# Leak on Bundle where It Was Welded to Exhaust Duct





# Leak Directly on Exhaust Duct Weld





# Exhaust Bellows Leak









## 2 Dephleg Indications





# Crack on Elbow





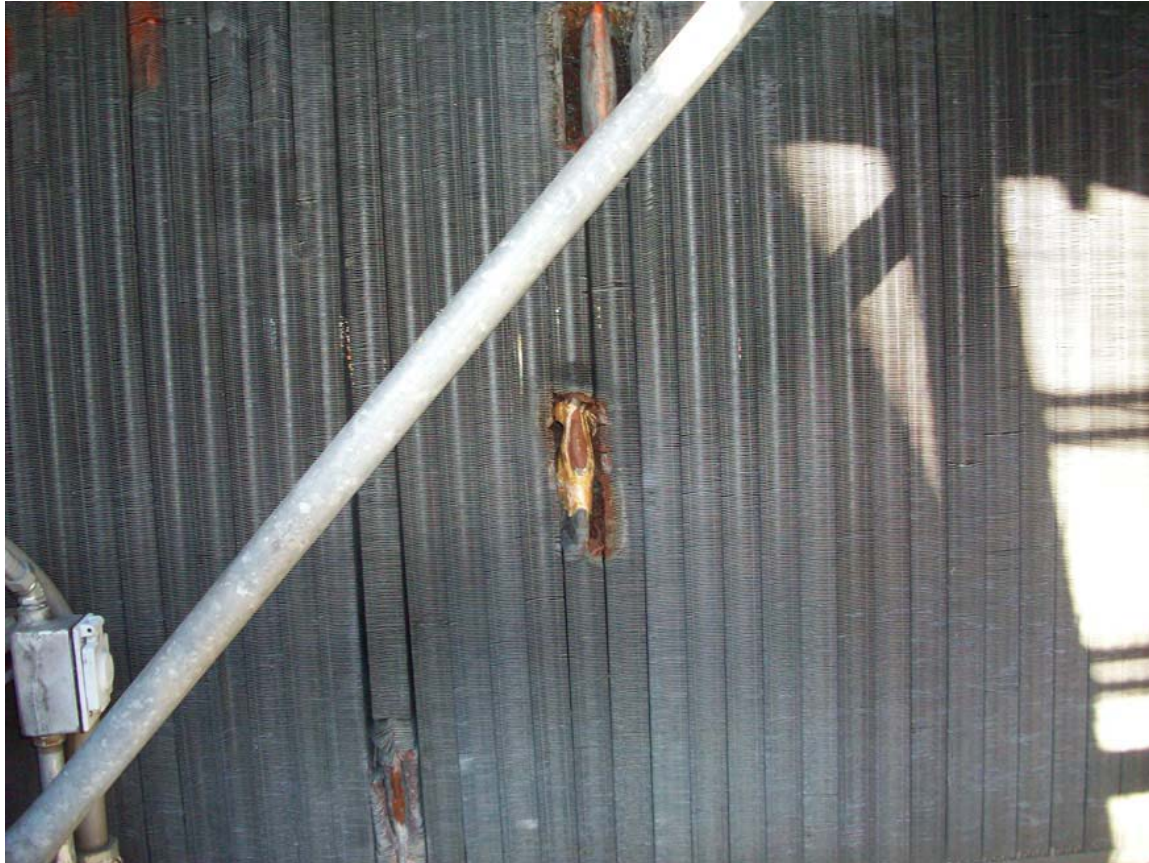


# Crack on Elbow





# Burst Tubes Due to Freezing





# Creative Leak Repairs







# Expanding Foam





# Questions?

