



## RETA Ohio General Meeting Minutes

May 3, 2013

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### **In Attendance:**

Chris Cost

Kris Lippencott

Chad Rader

Aaron Allen

Frank Demartino

Jeff Sutton

Tim Burton

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Presenter: Frank DeMartino, Chemtreat Inc

Topic: Chemical Water Treatment for Ammonia Systems

### **Meeting notes:**

#### **Asset Protection**

The purpose of water treatment is to save water, be safe, save money & use appropriate products effectively.

Typical number of cycles in central Ohio is conservatively three, this means that the conductivity of the water in circulation is three times higher than the conductivity measured in make up water

Conductivity of cooling water

Conductivity of city water - city of Columbus water hardness: 270-280 is typical

Columbus water varies throughout the year, please pay attention to it. Every region is different.

Scale inhibitor – one of the chemicals fed into the treated water prevents scale from forming too quickly.

Biocide- one of the chemicals fed into the treated water to prevent microbial growth, such as legionnaires disease, which is caused by the legionella bacteria.

Do not touch biocide chemicals, they are extremely corrosive, do not add biocide manually. Bleach can be used as a biocide.

Need to match problem with the appropriate type of water treatment.

The quality of your water treatment is based on the quality of your local service representative.

Application – monthly testing – get hand held conductivity meter. If the rep is doing all the testing – higher risk.

Test as often as necessary until results are stable.

\*take your own readings – increase frequency if results vary.

Fouling and scale build up will occur rapidly when conductivity measures above 2200 umhos.

Langelier Index measures pH and Alkalinity, dissolved solids in an aggregate single number between 1.0 and 2.0. Ideal is 1.5 to 1.6 for ammonia. Below 1.5 the water is corrosive, above 1.7 the water is scale forming.

Corrosive < 1.5 < scale building

Stay under 2.0 at all times to prevent fast scale formation.

Water spray pattern is an essential element in asset protection – broken nozzle, less pressure, poor coverage.

The key to galvanized condensers is proper start up.

The goal is Neutral pH for 90 days = (passivation) 7.5 – 8.0.

Ideal pH is 7.8.

No bromine, no chlorine during the first 90 days.

1.5 cycles is ideal for the first 90 days (proprietary biocide during passivation is required that does not contain chlorine or bromine).

Conductivity range 500-600 during passivation

We suspect condenser manufacturers are using less zinc in the hot dip mixture, which requires the water treatment to be diligently maintained.

Water treatment reports are a record that the technician was on site, and usually contain very important recommendations for the owner. Please read the reports and correct and remedy items before the next visit.

**\*\*Pay close attention to CRITICAL – Conductivity, inhibitor, pH\*\***

**\*Pay less attention to – Alkalinity, Hardness\***

Nalco, GE, Ecolab, Aqua Science, Chemtreat all provide water treatment services. When selecting a service provider remember you are not buying chemicals you are buying the service.

When feeding acid – then alkalinity goes down.

CaCl growth is dependent on hardness and high alkalinity.

### **Types of Chemical Feed Pumps**

Walchem – high quality equipment – can tie into phones or PLCs – high initial cost.

Milton Roy – Yellow – was good – now aren't as good. Lemon heads need replaced often. Chemical pumps should last as long as the condenser, about 25 years.

Municipalities are notorious for over chlorinating water supply (max was 1.5ppm, now 30.0ppm) If passivating with chlorinated make up water it may be necessary to add a holding tank to de-chlorinate water before it is added to water in circulation.

Reverse osmosis is not recommended for water treatment application. Results are very pure water from washing water through expensive membranes, mechanically filtering the water from suspended mechanical water.

Suspended solids - things you can see – muddy water

Dissolved solids – things you can't see

Is corrosive to condenser

Consider 50/50 mix with very difficult water in southern Ohio.

Zinc anode – good

Scour pad clean

“dolphin” uses kinetic energy to bang water together to build solids and precipitate out.

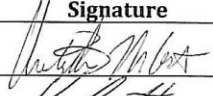
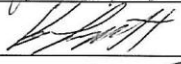

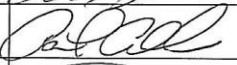

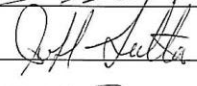

Was not inhibiting scale at locations when inspected by chemtreat.

Todd Stout, Stout Water Treatment 740-833-5749

Gives out conductivity hands to customers.

Reviewed Sample water analysis reports.

**Sign-in Sheet**  
**RETA Ohio General Meeting**  
**May 3, 2013**

	Name	Signature	Company	Phone	Email
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