

# CNE Water Treatment Scope Central Plant/HVAC Water Treatment

## West Siloam Central Plant

- Heating Hot Water Hydronic Loop – estimated 16,000 GAL
- Chilled Water Hydronic Loop – estimated 21,000 GAL
- Cooling Tower and Condenser Loop – estimated 5,500 Gal Tower Capacity plus Condenser Piping  
(3) 800 Ton Trane R-123 Chillers with Evapco Cooling Towers

## Roland Central Plant

- Heating Hot Water Hydronic Loop – estimated 6,700 GAL
- Chilled Water Hydronic Loop – estimated 17,000 GAL
- Cooling Tower and Condenser Loop – estimated 6,400 GAL (both systems combined. Estimated 3,200 gallons each)  
(2) 700 ton Daikin R-134 Chillers with Marley Cooling Towers

## Hard Rock South Central Plant

- Hot Water Hydronic Primary Loop – estimated 6,600 GAL
- Chilled Water Hydronic Primary Loop – estimated 10,000 GAL
- Cooling Tower and Condenser Loop – estimated 5,500 GAL Tower Capacity plus Condenser Piping  
(3) 800 Ton Trane R-123 Chillers with Evapco Cooling Towers
- Hot Water Hydronic Secondary Loop – estimated 1,400 GAL
- Chilled Water Hydronic Secondary Loop - estimated 2,200 GAL

## Hard Rock North Central Plant

- Hot Water Hydronic Loop – estimated 9,000 GAL
- Chilled Water Hydronic Loop – estimated 22,500 GAL
- Cooling Tower and Condenser Loop (3 Sets)

## Hard Rock HVAC

- Cherokee Tower Hotel Closed Loop (Two Pipe System) – estimated 900 GAL
- Aaon Units with Water Cooled Condensers (RTU 4, 7, 11, 19) Wash, clean, sanitize condensers as needed.

## Fort Gibson

- Chilled Water Loop – estimated 1000 GAL
- Heating Hot Water Loop – estimated 300 GAL

## Ramona

- Chilled Water Loop – estimated 1,500 GAL
- Heating Hot Water Loop – estimated 400 GAL

## Grove

- Chilled Water Loop – estimated 1,800 GAL
- Heating Hot Water Loop – estimated 480 GAL

## WRD

- Chilled Water Loop – estimated 1,500 GAL

## Tahlequah

- Chilled Water Loop – estimated 3,000 GAL
- Heating Hot Water Loop – estimated 1,800 GAL

## CNE Water Treatment Schedule

- Hard Rock – Twice per month
- WSS – Twice per month
- Roland – Twice per month
- FG – Once per month
- Ramona – Once per month
- WRD - Once per month
- Grove - Once per month
- Tahlequah – Once per month starting in Spring 2020

## Scope

- Provide required checks per month outlined above
- Must keep a record log at each location to keep track of chemicals used, repairs, etc.
- Provide detailed electronic water and service report for each site visit of what was done, the material used, time, changes/adjustments made, recommendations/comments.
- If storage is needed, you will need to clarify this on bids so we can see if warehouse space available. No outside storage of chemicals.
- Required to check-in and out with security on each visit.
- Provide and update SDS sheets as needed.

## Services

### Requirements:

- **Start-up Service and Training Seminars**
- **Program Administration Manual including SDS and Program Implementation and Troubleshooting Guidelines**
- **On-site Chemical Testing and Recommendations**
- **Annual Certified Lab Testing (water and solid samples) and Reports as Required**
- **Annual (minimum) Certified Lab Testing (bacteria and chemical analyses) and Reporting on Tower and Various Closed Loops**
- **Corrosion Coupon Studies and Lab Analyses as Required**
- **Bacteria Control Management Program Including Frequent Dip Slide, SRB and Swab Testing**
- **Equipment Expertise and Support**
- **Equipment Inspections**
- **All water treatment equipment and materials required to be kept clean and all areas cleaned up after each visit.**
- **Computer Generated Service Reports (Service reports issued on the day of service)**
- **On-going Training for all necessary personnel (our call)**
- **Weekly service calls & additional visits as needed**
- **Mechanical and Chemical Engineering Consulting**
- **Overall Water and Energy Management for Optimum Efficiency and Cost Control**
- **The vendor is required to monitor all control systems 24x7x365 and notify CNE personal via email, phone, and text message if anything is out of spec. (Advantage controls offers web service)**

### Control Equipment: Owner Provided

- **Advantage Control monitoring equipment provided and owned by CNE.**
- **Water treatment vendor is responsible for monitoring, operating, and controlling the Advantage Controls equipment to required perimeters.**
- **Water treatment vendor responsible for coordinating/completing Advantage Controls items/services.**

### Cooling Towers/Fluid Coolers

#### Requirements:

- Maintain scale, corrosion, slime, and general contaminant free chiller tubes.
- Corrosion rates must be documented with 180 days corrosion coupon program
- Maintenance of corrosion inhibitor in tower water at all times, Maintenance of polymer for tower system fouling and bacteria control

### Closed Loops

#### Requirements:

- Actual proposed MINIMUM nitrite residuals must be given for each loop system.
- Mild steel corrosion rates must be held to less than 1.0 mpy and copper rates at less than 0.2 mpy.
- Corrosion rates must documented with 180 days corrosion coupon program

### Microbial Control

The bacteria control programs for the tower and closed loops is listed in this section.

#### Requirements:

- A dual biocide program for the tower system including both an oxidizing and non-oxidizing biocide.
- All biocides must be liquid.
- All tower biocides must be fed through use of automated feed systems.
- Biocide program must provide for total bacteria counts below 10,000 cfu/ml at all times.
- Sulfate reducing bacteria and denitrifying bacteria must be monitored and controlled at all times.

### CNE Representations

- All aforementioned systems are in a "Good" condition. Contractor shall report to Owner any deficiencies prior to performing any service.
- Reasonable access to all systems shall be provided during normal operation. Monday thru Thursday 0800 – 1500 hours.
- Any equipment installation due by Owner affecting the scope of this work, shall be performed with Contractor oversight.
- Should Contractor recommend system repairs or upgrades to increase efficiency or minimize water loss, Owner shall effect said recommendations (if deemed warranted by Owner) at its expense.

- **CNE will perform routine, annual cooling tower/fluid cooler cleaning under separate contract.**
- **CNE shall perform regular, scheduled preventive maintenance of all affected systems as recommended by the respective equipment manufacturers.**
- **Any equipment utilized under this scope of work as provided by Contractor shall be returned to Contractor within 30 days of the contract termination, unless said equipment has been purchased by CNE or the equipment is required to be included in the performance of the work.**