



## Robertson County Tennessee

*Jody Stewart, Finance Director*

**Finance Department**

523 South Brown Street, Springfield, TN 37172

(615) 384-0202 Fax (615) 384-0237

MAIL DATE: **5/12/2014**

### **Chemical Water Treatment Services**

Sealed bids must be received by: **5/29/2014 at 10:00 AM**

Robertson County Finance Office

523 South Brown Street

Springfield, TN 37172

**THE OUTSIDE OF THE ENVELOPE MUST BE MARKED WITH THE BIDDER'S COMPANY NAME, ITEM BID, TIME OF BID OPENING, DATE OF BID OPENING, BID NO. 1265 AND MUST BE MARKED "SEALED BID, DO NOT OPEN."**

Bids are opened and read aloud to the public at the Robertson County Finance Office, 523 S. Brown Street, Springfield, TN 37172 immediately after the bid receipt deadline. Each vendor may submit more than one bid provided each bid meets the stated specifications. Each bid must be submitted in a separate sealed envelope with the appropriate notation on the outside. All bids must be signed by an authorized agent and submitted on the prescribed forms. Submission of bids by telegraph, telephone, or other electronic means is strictly prohibited. Please enclose a stamped, self addressed envelope to receive a completed bid tabulation form. Any brand name called for the bid specifications is provided as a reference only. Alternate brand name items offered for bid must be equivalent as to function, basic design, type and quality of material, method of construction, and any required dimensions. Bidder must attach a letter of exception to specifications.

For assistance with technical / product information contact James Taylor, Supervisor, School Building & Grounds at (615)384-0213. For assistance with bid procedures contact Cheryl Moon, Robertson County Finance Office at (615) 384-0202.

**Note: Robertson County reserves the right to reject any or all bids, to waive any technicalities or informalities, and to accept any bid deemed in the best interest of the County. All bids will be considered in accordance with Title VI and without regard to age, sex, color, race, creed, national origin, religious persuasion, marital status, political belief, or disability that does not prohibit the performance of duty.**

## BID SCHEDULE: #1265

Robertson County Schools is accepting sealed bid proposals for the following:

### Chemical Water Treatment Services

It is the intent of the Board of Education to award a contract for these services if satisfactory bids are received. Upon award for services, the contract will be for a period of 12 consecutive months beginning July 1, 2014 with a provision for up to (2) two, (1) one year contract extensions.

#### Scope of Work

Bidder must provide the following chemical water treatments & services for (11) eleven locations:

Chemical treatment for closed loop system.

Boiler system treatment.

Cooling Tower treatment. Successful bidder must be an Authorized Dolphin Service Provider

Please submit a chemical list with flow/feed rate information on a separate sheet based on the attached specifications.

#### Price per each (5) five gallon treatment chemicals:

Closed Loop System \$ \_\_\_\_\_

Boiler System \$ \_\_\_\_\_

Cooling Tower \$ \_\_\_\_\_

Percent increase of this bid for year (2) 2015-2016 \_\_\_\_\_ %

Percent increase of this bid for year (3) 2016-2017 \_\_\_\_\_ %

#### Letter of Compliance

Successful bidder must comply and provide a Letter of Compliance. Amendments to the Tennessee Code Annotated Section 49-5-413 require employers doing business with the Robertson County Board of Education to have their employees' criminal history records checked. No employer or employee shall come in direct contact with school children, children in a childcare program, and/or enter the grounds of a school or childcare center operated by the Robertson County Board of Education when children are present without this compliance letter on file.

#### Non-Collusion Affidavit

The agent of the bidding firm hereby certifies to the best of his/her knowledge and belief that this bid proposal to Robertson County, Tennessee has not been prepared in collusion with any other seller of similar products. The agent also certifies that the prices, terms and conditions of said bid proposal have not been communicated by the undersigned, nor by any employee or agent of the bidding firm, to any other seller of similar products and will not be communicated to any such seller prior to the official opening of said bid. The agent further states that no official or employee of Robertson County Government has promised any personal financial or other beneficial interest, either directly or indirectly in order to influence award of this bid.

\_\_\_\_\_  
Authorized Signature, Title (Owner/ Corporate Officer)

\_\_\_\_\_  
Date

Printed Name: \_\_\_\_\_

Company Name \_\_\_\_\_

Mailing Address \_\_\_\_\_

Telephone No. \_\_\_\_\_ Fax No. \_\_\_\_\_

E-mail address: \_\_\_\_\_

# **Water Treatment Specifications**

## **Closed Loop Systems**

It is the intent of this specification package to provide the required information to compare water treatment products and services.

The price for the chemical treatment will be on a per unit basis and should include the quarterly service visits. Provide a price for 5 gallon pails and include feedrate of the product.

### **Corrosion Control**

- Provide liquid chemical treatment that uses sodium nitrite and borate as the primary corrosion inhibitors with tolyltriazole for copper protection.
- The sodium nitrite level must be maintained within 800 to 1500 ppm control range, with tolyltriazole present at 5 to 50 ppm. pH should be maintained in the range of 8.3 – 11.0.
- All freight charges must be included in the costs.
- All chemical products must meet all applicable EPA, OSHA, and DOT guidelines.

### **Supervisory Services**

- Closed loop systems will be serviced on a quarterly basis and include the following:
  - Conduct chemical tests on each system (treatment residuals, conductivity, etc.)
  - Provide a service report listing test results in an electronic format.
  - Provide a method to store technical data and service reports in an electronic format for easy efficient access by Robertson County school personnel.

### **Qualifications**

- Supplier's primary business activity is water treatment.
- Supplier must have been in business for a minimum of five years with water treatment as primary business activity.
- Supplier must have laboratory facility capable of running typical water and deposit analysis, corrosion coupon studies, and bacteria analysis.
- Supplier must have at least one full time staff member who has a college degree in chemistry or a related technical degree whose primary function is technical support.
- Service representative must have at least 1 year experience in field service and maintain appropriate certifications (ex. Pesticide applicator).
- Supplier must have one back-up service representative who meets the same criteria as the primary.

# Water Treatment Specifications

## Boiler Systems

**NOTE:** All chemical products used in the boiler systems must only contain ingredients found on the FDA approval list from 21 Code of Federal regulations part 173.310, Boiler Water Additives.

### Scale and Deposit Control

- Provide a one drum all organic liquid product consisting of dispersing and crystal modifying chemicals maintaining an active level of 15 to 25 ppm in the boiler water.
- A phenolphthalein alkalinity level of 300 to 600 ppm must also be maintained.

### Corrosion Control

- Sodium sulfite is to be used to maintain a sulfite residual of 30 to 60 ppm in the boiler water.
- A blend of morpholine and cyclohexylamine is to be used for condensate return line corrosion protection. The active ingredients must not exceed 40%. A pH level of 7.5 to 8.0 must be maintained in the condensate water.

**Note:** All regulations concerning amine concentration limitations in the steam must be followed if the steam is used for humidification, food preparation, etc

### Blowdown Control

- Corrected conductivity level in the boilers are to be maintained within a range of 3000 to 3500 micromhos wherever possible.

**Note:** If the system has a high percentage of condensate return a sodium nitrite based chemical treatment program can be considered.



**Program Scope:**

**Dolphin Standard Service Requirements**

Start-up (if applicable) involves 2 site visits during month 1 to survey system, obtain makeup water samples, perform preliminary checklist, and outline expectations of service program with site management and/or customer.

The Service Program must include on-site monthly service visits (typically 12 month term). This program is designed to service and maintain the ( ) Dolphin unit(s) and associated control equipment that are operating at this facility.

Authorized Service Provider must monitor/analyze makeup and system water chemistry on each visit (specific constituents include calcium hardness, m-alkalinity, chlorides, silica, conductivity and pH). Any necessary adjustments to setpoint/PSID calculations will be made based on makeup water changes, system observation and consultation with Dolphin WaterCare.

Authorized Service Provider must clean and calibrate conductivity probe, and actuate blowdown valve from Conductivity Controller to confirm its proper operation at each service visit.

Authorized Service Provider must perform dipslide tests at least quarterly, and monthly during highest heat load to validate biological control of the condenser water systems.

**Authorized Service Provider must obtain (typically 2) Heterotrophic Plate Count Tests (HPC) during highest heat load to validate biological control of the condenser water systems. HPC tests will be analyzed at an independent laboratory using SM9215B protocol.**

**Authorized Service Provider must install and have corrosion coupons analyzed (typically each 90 days both mild steel and copper) if applicable, to conform to established ASTM (American Society for Testing and Materials) protocols (if corrosion racks are present).**

**Authorized Service Provider must obtain (typically 1-2) comprehensive water analyses of all treated water systems to be performed by a qualified water testing laboratory.**

**Authorized Service Provider must log the condenser water approach temperatures of all operating condensers on each service visit (if applicable). Log refrigerant head pressures prior to condensers as an alternative.**

**Authorized Service Provider must log pressure drop across any heat exchangers, as well as monitor condenser water (open loop) and (closed loop) temperatures going into and out of the heat exchanger (if applicable).**

**Authorized Service Provider must record all water meter data at each service visit (if applicable).**

**Authorized Service Provider must send Electronic Service Report promptly to designated FM/Customer Staff, with copies also going to Dolphin WaterCare.**

**Authorized Service Provider must review the Dolphin system operation, per standard practice, including review light status, cleaning of dust filters in the Signal Generators, and the prescribed Dolphin Circulation Protocol established for that location.**

**Authorized Service Provider must check for signs of algae in sunlit areas. If algae is found, service provider must notify owner with cleaning recommendations to be included in the owners PM process.**

**DOLPHIN SERVICE VISIT TASK CHECKLIST**

Page 1

Customer \_\_\_\_\_ DATE: \_\_\_\_\_

<b><u>TASK</u></b>		<b><u>TASK</u></b>	
Inspect Tower hot deck	See next pg. for notes	Record Chiller P & Temp's	See next pg for notes
Inspect Tower cold deck	See next pg. For notes	Record Plate & Frame HEX data	See next pg for notes
Check for algae in tower	See next pg. For notes	Dolphin <u>Components</u>	
Materials of construction		Status light	
Check evap. condenser tubes	See next pg. For notes	Clean Air filters Fan running?	
Check flow over cooling media		Oscilloscope Vp & KHz	
Separator & filter data	See next pg For notes	Primary voltages (start-ups)	
Check for water leaks		Cabinet condition	
Check for water clarity and odor		HPC swab test (in-house)	
Identify noisy pumps, etc.		Outside Lab Samples due	
Make-up water meter readings		Take pictures	
Blow-down water meter readings		Meet with customer	
M/U water analysis	See next pg for notes	Write report	
Control loop water analysis	See next pg for notes	Record Dolphin SN's	
Clean Flow switch			
Clean Conductivity probes			
Control loop flow verification			
Calibrate conductivity probe			
Coupon rack flow & orientation			
Call in for or calc. control set.pt.			
Test Blowdown valve operation			
PSID Calculation			

**DOLPHIN SERVICE VISIT LOG FORM**

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**Tower Inspection Notes:**

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**Separator / Filters Notes:**

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**Water Analysis Data:**

SAMPLE ID	Ca	M-Alk	Cl <sup>-</sup>	Cond.	pH	Iron	Si	Temp.

**Chillers / H-ex Data:**

Equipment & Stream	Pressure in	Pressure out	Temp. in	Temp. out	Apprch. T

**Other Notes:**

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## Schools and Addresses

Bransford Elementary 700 Bransford Drive Springfield, TN 37172	<ul style="list-style-type: none"> <li>• Steam Boiler Treatment</li> </ul>
East Robertson Elementary 5177 East Robertson Road Cross Plains, TN 37049	<ul style="list-style-type: none"> <li>• Closed Loop Treatment</li> <li>• 1 - Dolphin Cooling Tower Service</li> </ul>
East Robertson High 158 Kilgore Trace Cross Plains, TN 37049	<ul style="list-style-type: none"> <li>• Geothermal Closed Loop Treatment</li> </ul>
Greenbrier Elementary 2658 Hwy 41 S Greenbrier, TN 37073	<ul style="list-style-type: none"> <li>• Closed Loop Treatment</li> <li>• 1 - Dolphin Cooling Tower Service</li> </ul>
Greenbrier Middle 2450 Hwy 41 S Greenbrier, TN 37073	<ul style="list-style-type: none"> <li>• Closed Loop Treatment</li> <li>• Cooling Tower Treatment</li> <li>• Steam Boiler Treatment</li> </ul>
Greenbrier High 126 Cuniff Drive Greenbrier, TN 37073	<ul style="list-style-type: none"> <li>• Geothermal Closed Loop Treatment</li> </ul>
Jo Byrns High 7025 Hwy 41 N Cedar Hill, TN 37132	<ul style="list-style-type: none"> <li>• Closed Loop Treatment</li> <li>• 1 - Dolphin Cooling Tower Service</li> </ul>
Springfield High 5240 Hwy 76 E Springfield, TN 37172	<ul style="list-style-type: none"> <li>• Closed Loop Treatment</li> <li>• 2 - Dolphin Cooling Tower Service</li> </ul>
Springfield Middle 715 5 <sup>th</sup> Ave W Springfield, TN 37172	<ul style="list-style-type: none"> <li>• Closed Loop Treatment</li> <li>• Steam Boiler Treatment</li> </ul>
Watauga Elementary 1755 Lake Road Ridgetop, TN 37152	<ul style="list-style-type: none"> <li>• Steam Boiler Treatment</li> </ul>
White House Heritage High 7744 Hwy 76 E White House, TN 37188	<ul style="list-style-type: none"> <li>• Closed Loop Treatment</li> <li>• 2 - Dolphin Cooling Tower Service</li> </ul>