

**PUBLIC NOTICE  
INVITATION TO BID #1129**

The City of Springfield Water/Wastewater Department will be accepting sealed bids for the following:

**WATER TREATMENT PLANT'S LIQUID BLEACH TANKS**

Specifications may be downloaded at [www.springfield-tn.org](http://www.springfield-tn.org). Sealed bids must be received in the office of the City Recorder, 405 North Main Street, Springfield, TN 37172 by 3:00 pm local time, Tuesday, April 7, 2020. Please reference Bid #1129 on the outside of the sealed envelope. The City of Springfield reserves the right to reject any and all bids.

Lisa H. Crockett  
City Recorder

## INVITATION TO BID #1129

The City of Springfield will be accepting sealed bids for Water Treatment Plant's Liquid Bleach Tanks. Bidders shall submit sealed bids in the format specified in the Request for Bids no later than 3:00 PM CDT, Tuesday, April 7, 2020 at which time bids will be publicly opened and read aloud.

No bid may be withdrawn after the scheduled closing time for a period of 45 days. Bidding documents may be obtained on the city's website at [www.springfield-tn.org](http://www.springfield-tn.org).

Bidding documents should be mailed or hand delivered to:

Lisa H. Crockett  
Springfield City Hall  
**Liquid Bleach Tanks Bid #1129**  
405 North Main Street  
Springfield, TN 37172

Bids must be mailed or hand delivered. Electronic transmission, verbal or bids received after the closing date and time will not be accepted. The City of Springfield reserves the right to reject any or all bids, to waive technicalities or informalities, and to accept any bid deemed to be in the best interest of the City.

# TABLE OF CONTENTS

<b>Section I</b>	Water Plant Liquid Bleach Tanks Specification	3
<b>Figure 1</b>	New Bleach Conversion Tank Details	10
<b>Section II</b>	Bid Form	11

**Section I**  
City of Springfield, Tennessee  
Water Treatment Plant  
Liquid Bleach Tanks  
Bidding Specification  
March 2020  
Prepared by:  
Griggs & Maloney Project 1141-06

1.0 Liquid Bleach Tanks

Provide the equipment, transport, bulkhead fitting, and 1-inch thick rubber mats for the three 2,000-gallon bulk tanks and the two 500-gallon day tanks. These tanks are to be transported without damage to the Springfield Water Treatment Plant located at 6213 Smith Road in Cedar Hill, TN 37032.

Measurement for payment for this Bid for Liquid Bleach Tanks will be lump sum. All costs are to be included in the lump sum price. Terms of payment are net 30 days after delivery.

If awarded, the Liquid Bleach Tanks will be delivered within 45 calendar days of contract award.

A reduced copy of the construction drawing is included for Bidder review to allow bidders initial visual knowledge of the proposed layout, including location for tank bulkhead fittings and access hatch orientation.

1.01 Scope

- A. This specification covers upright, double wall, flat bottom storage tank assemblies. The assembly consists of one cylindrical inner primary tank and one blended form octagonal outer secondary tank. Each tank is molded in one-piece seamless construction by rotational molding (laminated or fabricated tanks will not be accepted). The tanks are designed for above-ground, vertical installation and are capable of containing chemicals at atmospheric pressure. The assembly shall be designed to prevent rainwater from entering the containment tank. The design shall allow direct primary tank base retention for up to seismic conditions per IBC code requirements. The containment tank shall be designed to hold a minimum of 115% of the normal fill capacity of the primary tank. Included in this specification are requirements for material properties, design, construction, dimensions, tolerances, workmanship, and appearance. Tank capacities are 2,000 gallons (3 required) and 500 gallons (2 required).
  
- B. Contractor shall supply and install all materials, equipment, appurtenances, specialty items, and services required to provide an upright, double wall, flat bottom, closed top, polyethylene storage tank for storage of the chemical application(s) described in Table I. Each tank is to be molded in one-piece seamless construction according

to ASTM D 1998 (laminated or fabricated tanks will not be accepted) and will be capable of storing the chemical application at atmospheric pressure.

#### 1.02 Manufacturer

- A. Tanks shall be manufactured by Snyder Industries Inc. or approved equal.

#### 1.03 Applicable Documents

- A. ASTM (American Society for Testing and Materials) Standards:
  - 1. D618 Conditioning Plastics and Electrical Insulating Materials for Testing
  - 2. D638 Tensile Properties of Plastics
  - 3. D790 Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
  - 4. D883 Definitions of Terms Relating to Plastics
  - 5. D1505 Density of Plastics by the Density-Gradient Technique
  - 6. D1525 Test Method for Vicat Softening Temperature of Plastics
  - 7. D1693 Test Method for Environmental Stress-Cracking of Ethylene Plastics
  - 8. D1998 Standard Specification for Polyethylene Upright Storage Tanks
  - 9. D2765 Degree of Crosslinking in Crosslinked Ethylene Plastics as Determined by Solvent Extraction
  - 10. D2837 Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials
  - 11. D3892 Practice for Packaging/Packing of Plastics
  - 12. F412 Definitions of Terms Relating to Plastic Piping Systems
- B. ARM (Association of Rotational Molders) Standards: Low Temperature Impact Resistance (Falling Dart Test Procedure)
- C. ANSI Standards: B-16.5 Pipe Flanges and Flanged Fittings
- D. OSHA Standards: 29 CFR 1910.106 Occupational Safety and Health Administration, Flammable and Combustible Liquids
- E. UBC CODE: Uniform Building Code 2006 Edition
- F. IBC CODE: International Building Code 2015 Edition

#### 1.04 Submittals

- A. Drawings and Data: The manufacturer's shop drawings shall be approved by the engineer or contractor prior to the manufacturing of the tank(s) unless the tanks are in stock. Then, shipment of in stock tanks will not occur until engineer approved. Data and specifications for the equipment shall include, but shall not be limited to the following submittals.
- B. Vendor shall submit for review sufficient literature, detailed specifications, and drawings to show dimensions, materials used, design features, internal construction,

weights and any other information required by the Engineer for review of storage tanks and accessories.

C. Information to be included with the submittals is specified below:

1. Shop drawings for the tanks shall include as a minimum the following:
  - a. Service Conditions: Chemical environment and temperature.
  - b. Statement that fabrication shall be in accordance with ASTM D 1998, where applicable.
  - c. Sizing and description of the fittings and accessories for each tank that are to be supplied by the tank manufacturer.
  - d. Layouts and assembly schedules for each tank identifying the location and elevation from the bottom of the tank for all connections and appurtenances supplied by the tank manufacturer.
2. Resin - A copy of the resin data sheet from the resin manufacturer for the tank is to be supplied and the tank manufacturer is to certify that it will be the resin used in the manufacture of the tank. Verification may be required if the resin is to be FDA or NSF 61 listed.
3. Wall thickness - The designed wall thickness audit is to be supplied based upon 600 psi hoop stress (ASTM D 1998) @ 100 degrees F.
4. Supporting information on fittings and accessories to be supplied.
5. Technical Manuals: The tank manufacturer's "Guideline for Use & Installation" is to be submitted for review.
6. Manufacturer's warranty
7. Factory Test Report: Upon completion of the tank, or prior to shipment of tanks in stock, the manufacturer's inspection report is to be supplied for each tank.
  - a. Verification of wall thickness (See 1.09 E.)
  - b. Impact test (See 1.09 C.)
  - c. Hydrostatic test (See 1.09 F.)
  - d. Verification of fitting placement (See 1.09 B.)
  - e. Visual inspection (See 1.09 G.)

## 1.05 Service Conditions

- A. The supplied tanks shall be fabricated with HDLPE resin materials (type II) designed to contain  $\leq 16.5\%$  sodium hypochlorite solution. Tanks will be designed to 1.9/ASTM specific gravity, with fitting manufactured from PVC, gaskets to be Viton, with encapsulated 316L stainless steel flanged bolts.

Tanks to be supplied:

Three (3) – 2,000 gallon, fully contained tanks. Snyder Drawing Number ASM TK 2000 CCS or approved equal.

Two (2) – 500 gallon, fully contained tanks. Snyder Drawing Number ASM TK 500VNT X 48 DCT or approved equal.

See attached drawing for specific tank number and accessories.

## 1.06 Design Requirements

- A. The minimum required wall thickness of the cylindrical shell at any fluid level shall be determined by the following equation, but shall not be less than 0.187 in. thick.

$$T = P \times O.D./2 SD = 0.433 \times S.G. \times H \times O.D./2 SD$$

T = wall thickness

SD = hydrostatic design stress, PSI

P = pressure (.433 x S.G. x H), PSI

H = fluid head, ft.

S.G. = specific gravity, g/cm<sup>3</sup>

O.D. = outside diameter, in.

1. The hydrostatic design stress shall be determined by multiplying the hydrostatic design basis, determined by ASTM D2837 using rotationally molded samples, with a service factor selected for the application. The hydrostatic design stress would be  $\leq 660$  PSI at 73 degrees Fahrenheit for Type I and Type II materials based the resin density. The tank shall have a stratiform (tapered wall thickness) wall. In no case shall the wall thickness be less than the minimum allowed per calculation of ASTM D1998.
  2. The hydrostatic design stress shall be derated for service above 100 degrees Fahrenheit and for mechanical loading of the tank.
  3. The standard design specific gravity shall be 1.9.
- B. The minimum required wall thickness for the cylinder straight shell must be sufficient to support its own weight in an upright position without any external support. Secondary containment tanks shall be designed per the manufacturer's standard containment thickness requirements. The secondary containment shall be configured to allow shipment of the primary tank inside of the secondary tank. The shipment shall be done without the aid of additional spacer blocks which can be lost during shipment causing tank damage.

- C. The top head must be integrally molded with the cylinder shell. The minimum thickness of the top head shall be equal to the top of the straight wall. The primary tank top shall be configured to prevent rain water from entering the secondary containment tank. The top head of tanks with 550 or more gallons of capacity shall be designed to provide a minimum of 1300 square inches of flat area for fitting locations. The primary tank shall be keyed to the secondary tank preventing primary tank rotation. The secondary containment shall have 115% of the normal fill capacity of the primary tank.
- D. Tanks with 550 or more gallons of capacity shall have a minimum of 3 lifting lugs integrally molded into the top head. The lifting lugs shall be designed to allow erection of empty primary and secondary tanks. Tanks shall be capable of being lifted into position as a unit (primary and secondary tanks).
- E. The tank shall be designed to provide a minimum of 4 tie-down lugs integrally molded into the top head. The tie-down lugs shall be designed to allow tank retention in wind and seismic loading situations without tank damage. The primary/secondary tank unit shall be configured to allow direct primary tank base retention for seismic load conditions. The base retention unit shall be anchor bolted to an appropriate structure and not require additional spacer blocks.

#### 1.09 Quality Assurance & Test Methods

- A. The tanks of the same material furnished under this Section shall be supplied by a manufacturer who has been regularly engaged in the design and manufacturing of rotationally molded polyethylene chemical storage tanks using cross-linked and high density linear polyethylene tanks for over ten years.
- B. Dimensions and Tolerances
  - 1. All dimensions will be taken with the tank in the vertical position, unfilled. Tank dimensions will represent the exterior measurements.
  - 2. The tolerance for the outside diameter, including out of roundness, shall be per ASTM D1998.
  - 3. The tolerance for fitting placements shall be +/- 0.5 in. in elevation and 2 degrees radial at ambient temperature.
- C. Low Temperature Impact Test (*copy of the test report will be provided if ASTM documents are ordered*)
  - 1. Test specimens shall be taken from fitting location areas.
  - 2. Test specimens shall be conditioned at (- 40) degrees Fahrenheit for a minimum of 2 hours.
  - 3. The test specimens shall be impacted in accordance with the standard testing methods as found in ASTM D1998. Test specimens < 1/2" thickness shall be tested at 100 ft. lb. Test specimens > 1/2" thickness shall be tested at 200 ft. lb.
- D. Degree of Crosslinking Test (% Gel – Type I Resin Only)

1. The test method used is to be the o-xylene insoluble fraction (gel test) per ASTM D2765 Method C. This test method is for determination of the ortho-xylene insoluble fraction (gel) of crosslinked polyethylene. A Gel test will be conducted if ordered by the customer.
  2. The percent gel level for Type I tanks on the inside 1/8 in. of the wall shall be a minimum of 65%.
- E. Ultrasonic Tank Thickness Test (*copy of the test report will be provided if ASTM documents are ordered*)
- a. All primary tanks 2000 gallons or larger shall be measured for tank wall thickness at 6", 1ft., 2ft. and 3ft. on the tank sidewall height at 0° and 180° around the tank circumference with 0° being the tank manway and going counter-clockwise per ANSI standard drafting specifications. A copy of this test report can be ordered when placing the original tank order. All tanks shall meet design thickness requirements and tolerances.
  - b. Tanks smaller than 2000 gallons are only periodically measured at the start of a production run or after any design changes. Customers can place an order for tank wall thickness measurements on smaller tank sizes when placing the original order. A copy of the test report will be provided if ordered.
- F. Hydrostatic Water Test
1. The hydrostatic water test shall consist of filling the primary tank to brim full capacity for a minimum of four hours and conducting a visual inspection for leaks. A hydrostatic water test will be conducted if ordered by the customer.
- G. Workmanship
- a. The finished tank wall shall be free, as commercially practicable, of visual defects such as foreign inclusions, air bubbles, pinholes, pimples, crazing, cracking and delaminations that will impair the serviceability of the vessel. Fine bubbles are acceptable with Type II tanks to the degree in which they do not interfere with proper fusion of the resin melt.
  - b. All cut edges where openings are cut into the tanks shall be trimmed smooth.

## 2.01 Warranty

- A. The tank shall be warranted for three years in regards to defects in materials and workmanship. The warranty on fittings and accessories supplied by the tank manufacturer will be for one year. The warranty will begin at time of delivery.

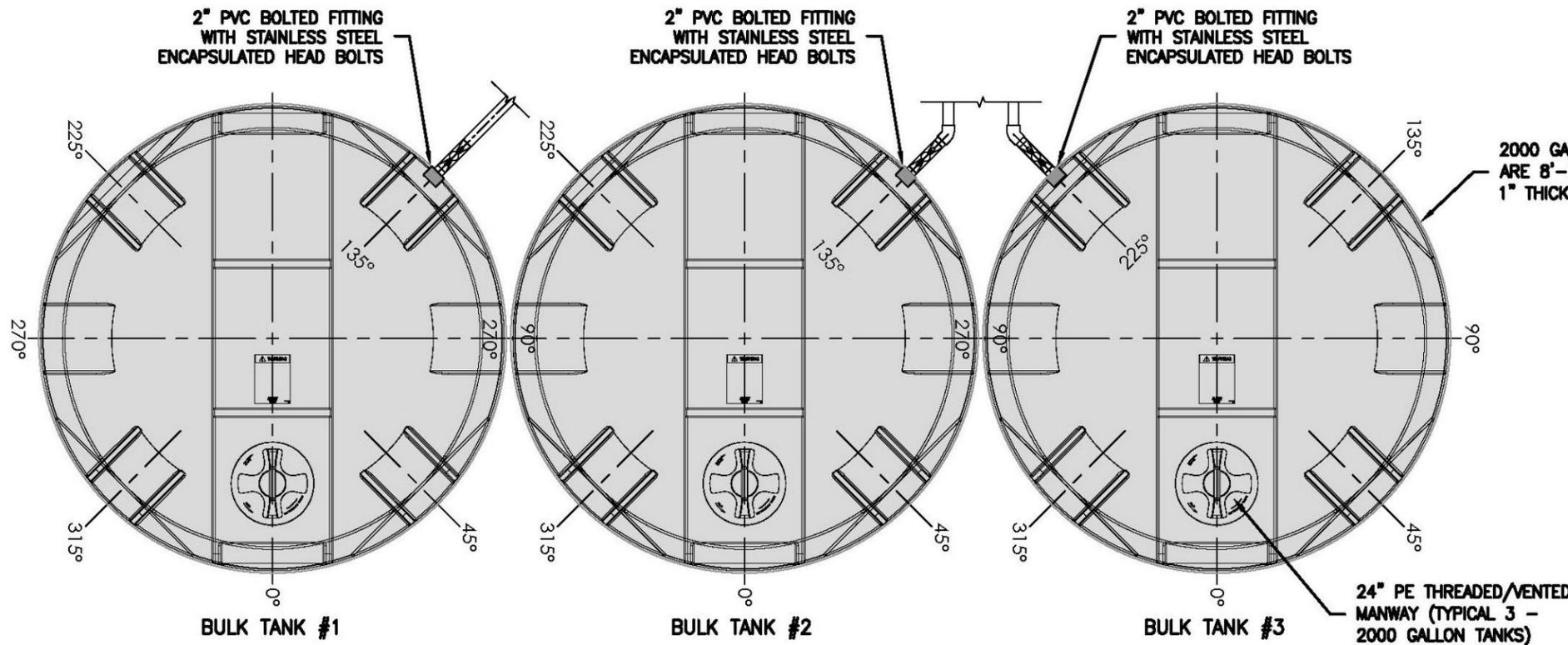
## 2.02 Marking, Packing and Packaging

- A. The tanks shall be marked to identify the product, date (month and year) of manufacture, capacity, and serial number. The tank shall be shipped with a 3 of 9, HRI bar code label containing tank description, manufacturing order number, part number, serial number, manufacturer, and date.

- B. All packing, packaging, and marking provisions of ASTM Practice D3892 shall apply to this standard.
- C. Tank shrink wrapping and bagging is required.

### 3.01 Shipping, Delivery & Storage

- A. Transportation, handling, storage of the tanks, and installation shall be in accordance with the manufacturer's printed instructions.
- B. Upon receipt of the tank and accessories the purchaser and/or his agent shall be responsible for inspection for damage and to verify that the system is complete. If damage has occurred, a claim should be filed with the carrier by the purchaser, and the manufacturer should be notified prior to the tank being put into service. All fittings and accessories need to be installed and adjusted in the field according to the manufacturer's Guidelines for Use & Installation.

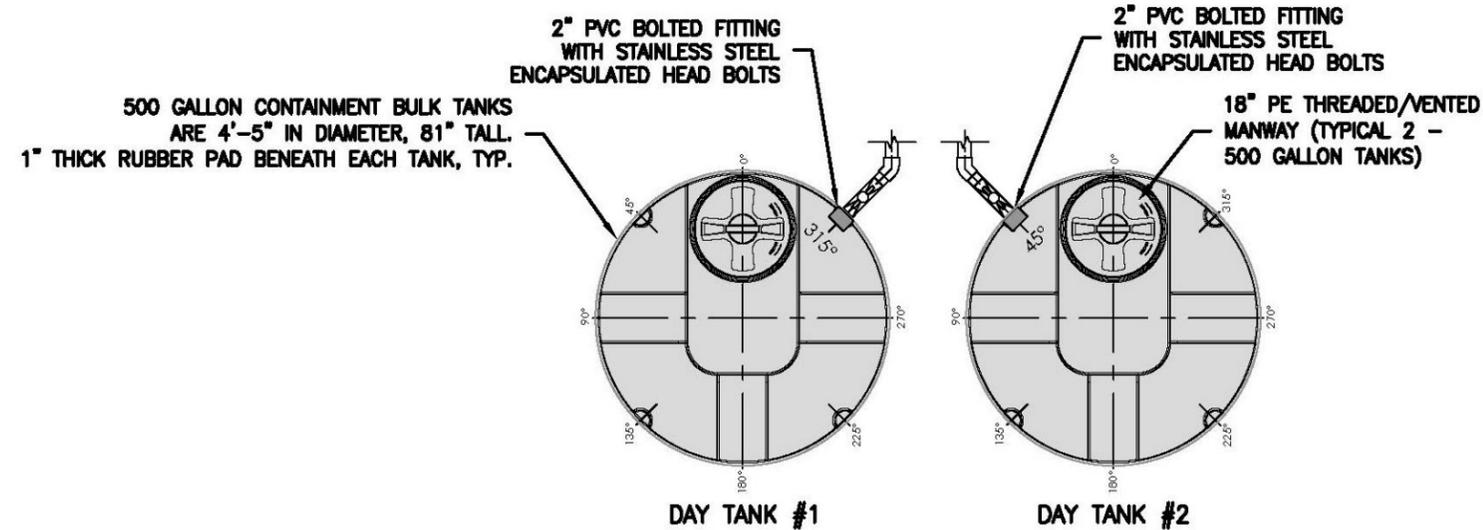


2000 GALLON CONTAINMENT BULK TANKS ARE 8'-6" IN DIAMETER, 102" TALL. 1" THICK RUBBER PAD BENEATH EACH TANK, TYP.

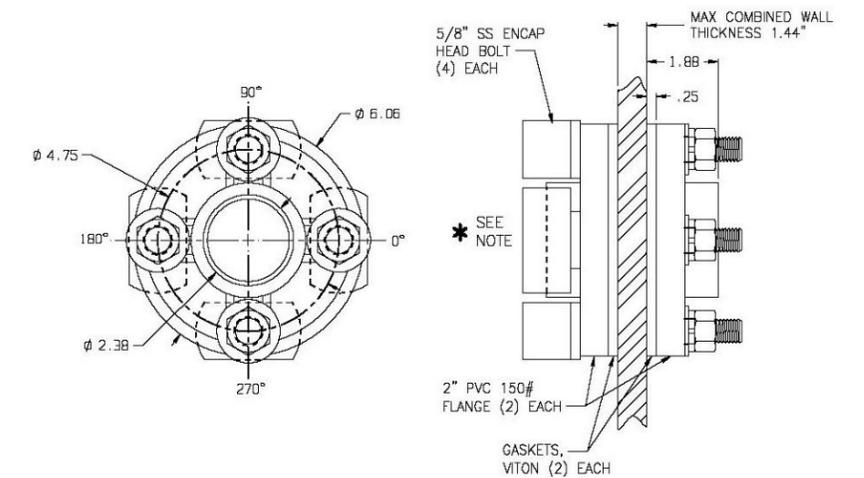


NOTE: TANK FITTINGS SHALL BE INSTALLED SUCH THAT THE CENTERLINE OF EACH FITTING WILL BE 11.25 INCHES ABOVE THE CONCRETE FLOOR.  
 \* EACH TANK FITTING SHALL BE SUPPLIED WITH A 2" SUCTION NIPPLE AND ELBOW INSTALLED INSIDE EACH TANK SUCH THAT THE SUCTION PIPE ENTRANCE IS 2" ABOVE TANK FLOOR.

**2000 GALLON BULK TANKS**



**500 GALLON DAY TANKS**



EACH 2" PVC BOLTED FITTING SHALL BE SUPPLIED WITH AN INSTALLED "UNIFIED FITTING OUTLET", SIZED FOR THE SELECTED TANK, INSTALLED WITH THE 2" BOLTED FITTING.

**2" PVC BOLTED FITTING**  
NOT TO SCALE

© 2020 Griggs & Maloney, Inc.  
**GRIGGS & MALONEY**  
 INCORPORATED  
 Engineering & Environmental Consulting  
 P.O. BOX 2968, MURFREESBORO, TN 37133-2968  
 (615) 895-8221 \* FAX (615) 895-0632

**WATER TREATMENT PLANT BLEACH UPGRADES  
 CITY OF SPRINGFIELD, TENNESSEE**

**FIGURE 1  
 NEW BLEACH CONVERSION  
 TANK DETAILS**

<b>PROJECT NO. 1141-06</b>	
DATE: FEBRUARY 2020	DRAWN BY: DSM
SCALE: 3/8"=1'-0"	CHECKED BY: RWM
	APPROVED BY: RWM
<b>SHEET NO. 1 OF 1</b>	

**SECTION II  
LUMP SUM BID FORM  
Water Treatment Plant Liquid Bleach Tanks**

The undersigned, having examined the Request for Bids Proposal Documents, Bidding Specifications, Drawings, and all related documents and data, hereby agrees to furnish all labor, materials, equipment, and all other costs to complete the project in accordance with this request for bids as follows:

**BASE BID, LIQUID BLEACH TANKS**

Provide all of the equipment, liquid bleach tanks, transport, for the new liquid bleach system at the Springfield Water Treatment Plant.

Base Bid Lump Sum Bid Price

---

(Lump Sum Base Bid Price in Numbers)

---

(Lump Sum Base Bid Price in Words)

**SPECIFICATION COMPLIANCE**

Unless otherwise noted, all bids for the Water Treatment Plant Liquid Bleach Tanks as requested shall be in complete accordance with the specifications detailed herein.

Bidders shall note in the space provided below any exceptions or deviations in any way from the specifications of any section of this RFB. Bidders should provide complete detail of exceptions or deviations.

**Proposal Exceptions**

Proposal Section	Brief Description
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

By signature below, bidder acknowledges any bid to be in full compliance with all aspects of each section of the RFB not noted above. The undersigned hereby declares that no person or

party other than the undersigned have any interest whatever in this proposal, that it is without any connection or collusion with any person or persons making or having made any proposal for the same work and without any previous understanding with such person or persons as to relative prices, obviating competition, and that it is made in good faith.

Respectfully submitted by:

Firm Name: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Signed by: \_\_\_\_\_

(Signature-attach evidence of authority to sign)

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

(Printed or Typed)

Title: \_\_\_\_\_

Telephone Number \_\_\_\_\_

The "Firm" is a \_\_\_\_\_ located in the  
(Corporation/Partnership)

State of \_\_\_\_\_  
(State)

**AFFIDAVIT**

**STATE OF TENNESSEE DRUG-FREE WORKPLACE AFFIDAVIT**

COUNTY OF \_\_\_\_\_ OF PRIME BIDDER

NOW COMES AFFIANT, who being duly sworn, deposes and says:

1. He/She is the principal officer for \_\_\_\_\_;
2. That the bidding entity has submitted a bid to the City of Springfield for the supply of \_\_\_\_\_;
3. That the bidding entity employs no less than five (5) employees;
4. That Affiant certifies that the bidding entity has in effect, at the time of submission of its bid is a drug-free workplace program that complies with §50-9-113, *Tennessee Code Annotated*.
5. That this affidavit is made on personal knowledge.

Further Affiant saith not.

\_\_\_\_\_  
AFFIANT

SUBSCRIBED AND SWORN TO before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
NOTARY PUBLIC

My Commission expires: \_\_\_\_\_

**IRAN DIVESTMENT ACT**

EACH VENDOR BIDDING SHALL FILL IN AND SIGN THE FOLLOWING

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to best of its knowledge and belief that each bidder is not a person included within the list created pursuant to TCA 12-12-106.

Bidder (*Indicate correct name of bidding entity*) \_\_\_\_\_

By: (*Signature*) \_\_\_\_\_

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

Title: \_\_\_\_\_

Date: \_\_\_\_\_

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

Before me personally appeared with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence) and who acknowledged that such person executed the foregoing affidavit for the purposes therein contained.

Witness my hand and seal at office this \_\_\_\_\_ day of \_\_\_\_\_ .

\_\_\_\_\_  
Notary Public

My commission expires \_\_\_\_\_

# IRAN DIVESTMENT ACT NOTICE

Tenn. Code Ann. § 12-12-106 requires the chief procurement officer to publish, using credible information freely available to the public, a list of persons it determines engage in investment activities in Iran, as described in § 12-12-105.

For these purposes, the State intends to use the attached list of “Entities determined to be non-responsive bidders/offerers pursuant to the New York State Iran Divestment Act of 2012.”

While inclusion on this list would make a person ineligible to contract with the state of Tennessee, if a person ceases its engagement in investment activities in Iran, it may be removed from the list.

If you feel as though you have been erroneously included on this list please contact the Central Procurement Office at [CPO.Website@tn.gov](mailto:CPO.Website@tn.gov).

List Date: September 20, 2019

Source: <https://www.ogs.ny.gov/iran-divestment-act-2012>

1. Ak Makina, Ltd.
2. Amona
3. Bank Markazi Iran (Central Bank of Iran)
4. Bank Mellat
5. Bank Melli Iran
6. Bank Saderat Iran
7. Bank Sepah
8. Bank Tejarat
9. China Precision Machinery Import- Export Corporation (CPMIEC)
10. ChinaOil (China National United Oil Corporation)
11. China National Offshore Oil Corporation (CNOOC)
12. China National Petroleum Corporation (CNPC)
13. Indian Oil Corporation
14. Kingdream PLC
15. Naftiran Intertrade Co. (NICO)
16. National Iranian Tanker Co. (NITC)
17. Oil and Natural Gas Corporation (ONGC)
18. Oil India, Ltd.
19. Persia International Bank
20. Petroleos de Venezuela (PDVSA Petróleo, SA)
21. PetroChina Co., Ltd.
22. Petronet LNG, Ltd.
23. Sameh Afzar Tajak Co. (SATCO)
24. Shandong FIN CNC Machine Co., Ltd.
25. Sinohydro Co., Ltd.
26. Sinopec Corp. (China Petroleum & Chemical Corporation)
27. SKS Ventures
28. SK Energy Co., Ltd.
29. Som Petrol AS
30. Unipec (China International United Petroleum & Chemicals Co., Ltd.)
31. Zhuhai Zhenrong Co.

# IRAN DIVESTMENT ACT

“By the submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not a person included within the list created pursuant to § 12-12-106.”

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Title: \_\_\_\_\_