

# Clay Water Supply Corporation

*Serving the Clay Community*

26550 Ranch Road 12, Suite 1 \* Dripping Springs, Texas 7820 \* (512) 894-3322 \* fax (512) 858-1414

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June 10, 2024

Gary Westbrook, General Manager  
Post Oak Savannah Groundwater Conservation District  
310 East Avenue C  
P.O. Box 92  
Milano, Texas 76556

Re: Clay Water Supply Corporation (“CWSC”)  
Post Oak Savannah Groundwater Conservation Grant 2022  
Continuing TTHM remediation / Hydrogen Sulfide Bacterial Removal

Dear Mr. Westbrook:

Clay Water Supply Corporation has made substantial progress with Total Trihalomethane (“TTHM”) removal from its water supply. Through Grant awards from POSGCD in 2021, the System was able to install a chloramine disinfectant system to address TTHM removal. This work has effectively removed TTHM’s, but has given rise to additional issues that need to be addressed.

With the chloramine disinfectant system, the system has been unable to keep an adequate residual throughout the distribution system. This necessarily requires substantial flushing at frequent intervals in an efforts to maintain an adequate disinfectant residual. In addition, the water quality provided by this production well has been unacceptable.

Working with our engineers, it has been learned that the chloramine residual is reduced or eliminated due to a high concentration of Hydrogen sulfide coming from the production well. The corrective action was put forth by our engineers and is summarized by email dated April 9, 2024. *(See attached email from Southwest engineers dated April 9, 2024).*

Following the guidelines from Southwest Engineers, we solicited quotes from two well companies. One was unequipped to perform this work. J & S Water Wells is able to perform this work and has submitted an estimated costs for doing so. *(See attached J & S costs estimates dated May 13, 2024).*

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Post Oak Savannah Groundwater Conservation District  
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The total estimate costs to complete this work remains unknown. However, we have attached cost estimates to complete this phase of work. (See attached 2022 Grant Award budget).

We respectfully request that this work be approved to proceed in accordance with the objectives of the 2022 grant award. If you have any questions or if we may provide additional information, please do not hesitate to contact me at [pck@pgms.net](mailto:pck@pgms.net) or by calling (512) 845-3230.

Sincerely,



Patrick C. King, General Manager  
Cade Lakes Water Supply Corporation

Enclosures/ Email from Dick Collins, P.E. dated April 9, 2024  
Cost Estimate from J & S Water Wells dated May 13, 2024  
2022 Grant Award Budget & Summary of costs

Cc: Mr. Edwin Moore, Vice President  
Clay Water Supply Corporation

## Patrick King

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**To:** pck@pgms.net  
**Subject:** FW: Clay WSC

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**From:** Dick Collins <dick.collins@swengineers.com>  
**Sent:** Tuesday, April 09, 2024 4:56 PM  
**To:** pck@pgms.net  
**Cc:** matthew@pgms.net; Jerry Shepherd <jerry.shepherd@swengineers.com>  
**Subject:** Clay WSC

Patrick,

I spoke with Matthew this afternoon, and he explained the situation as follows. The well has always produced water containing hydrogen sulfide, but disinfection with free chlorine, as opposed to chloramine, controlled the hydrogen sulfide. Disinfection with chloramine controls the hydrogen sulfide at the plant; however, it reoccurs in the distribution system.

Hydrogen sulfide in well water is frequently caused by sulfate reducing bacteria growing in the well and in the near formation, the result of contamination. The sulfate reducing bacteria can be destroyed by successful super-chlorination of the well, and if destroyed the bacteria should not return unless the well is contaminated again. A driller would remove the pump, add chlorine to a concentration of at least 200 ppm in the well and surrounding formation and wetting the interior of the casing above the water level. After a short time, clean chlorinated water would be added to the well to displace the chlorine into the formation, preferably with agitation with a surge block to help in getting the highly chlorinated water to all areas of the formation. After another short time the well would be produced, preferably by jetting with an isolation tool, to remove the highly chlorinated water. The pump, column, cable and anything else would be sterilized before being returned to the well. To successfully accomplish the driller would need to have correct knowledge of the well structure. It may also be necessary to remove any fill that may have accumulated at the bottom of the well.

Caution! The operation may result in removing mud and formation fines from the well. Since another source of water is not available, the driller should be prepared for continuous operation until the well is returned to service.

The reoccurrence of hydrogen sulfide seems to indicate the presence of sulfate reducing bacteria in the distribution system. Provided a chlorine residual is maintained throughout the system, I don't know why there would be sulfate reducing bacterial in the distribution system. Matthew has suggested a chlorine burn to kill any such bacterial growth, in addition to treating the well.

**R. C. Collins, P.E.**  
Senior Project Engineer



p: (830) 672-7546 ext 425  
a: 307 Saint Lawrence Street, Gonzales, Texas 78629  
w: [swengineers.com](http://swengineers.com)  
TBPE No. F-1909



# J & S WATER WELLS

P.O. BOX 675 BELLVILLE TEXAS 77418  
800-833-5538

May 13, 2024

Clay WSC c/o PGMS, Inc.  
Attn: Matthew Monfreda  
(737) 228-2841  
[matthew@pgms.net](mailto:matthew@pgms.net)

Re: Clay WSC Well #2 Disinfection 2024

• Mobilize service rig & equipment	\$ 2,500.00
• Pull submersible pump and chorine treat equipment	\$ 4,500.00
• Prepare and set 200ppm chlorine through isolation tool and agitate	\$ 3,300.00
• Produce well with air until chlorine is removed	\$ 1,800.00
• Set submersible equipment	\$ 4,500.00
Total:	\$16,600.00

Notes:  
Make up water provided by owner  
Discharge into nearest drainage inlet  
Any Required Permits or Fees Not Included  
Federal, State or Local Sales Taxes Not Included, If Applicable

**Quote By:** Shaun Grell – valid for 30 days

**Regulated by:** The Texas Department of Licensing and Registration. P.O. Box 12157,  
Austin, Texas 78711. 800-803-9202 or 512-463-7880

**CLAY WATER SUPPLY CORPORATION**

Proposed Budget for 2022 Post Oak Savannah Groundwater  
Conservation and Enhancement Grant Project

Below are the steps necessary to accomplish the objectives of removing TTHM and providing safe, compliant drinking water.

<b>Location</b>	<b>Unit</b>	<b>Amount</b>
Water Treatment Plant	Sampling and lab analysis	\$6,000
Water Treatment Plant	Preliminary Study and Design Services	\$15,000
Water Treatment Plant	Project Design, Bidding and Engineering	\$75,000
Water Treatment Plant	Construction Contract	\$250,000
	<b>SUBTOTAL CONSTRUCTION</b>	<b>\$346,000</b>
	Less Applicants Contribution (From 2021 POSGCD Grant Award)	(\$90,000)
	<b><u>Total Grant Requested</u></b>	<b><u>\$250,000</u></b>

**Hydrogen Sulfide Bacteria Removal**

Engineering work .....	\$15,000	
Field work & related activities .....	\$15,000	
J & S Water Wells estimate .....	\$16,600	
Laboratory costs .....	\$ 1,200	
<b>Total estimated costs .....</b>		<b>\$47,800</b>
Total Grand funds remaining	\$250,000	
Total this phase of work	(\$47,800)	
<b>Grand Funds Remaining .....</b>		<b>\$202,200</b>