COUNTY AGENDA REQUEST

Department:	Water System	Presenter(s):	Tony Parrott
Meeting Date:	Thursday, December 15, 2011	Type of Request:	Consent

Wording for the Agenda:

Approval of staff's recommendation to award Bid #808 Total Organic Carbons Analyzer, to GE Analytical Instruments for a Sievers 5310 C Series TOC Analyzer in the amount of $29,943 to be used a the lab at the Crosstown Water Treatment Plant.

Background/History/Details:

In 2001 the Water System has issues with compliance with the State's Total Organic Carbons standards. In order to better track the Water System's treatment process, a Tekmar- Dohrmann Phoenix 8000 TOC Analyzer was purchased for $24,343.70. This unit uses now out-dated technology, requires lab grade nitrogen gas, and has been used daily for almost 10 years. This unit was purchased so that we could compare our tests with the tests performed by the State's lab. With the coming changes in our water treatment processes with the MIEX System, we need lab equipment that is the most accurate and dependable to use our treatment options to the fullest.

What action are you seeking from the Board of Commissioners?

Approval of staff's recommendation to award Bid #808 Total Organic Carbons Analyzer, to GE Analytical Instruments for a Sievers 5310 C Series TOC Analyzer in the amount of $29,943 to be used a the lab at the Crosstown Water Treatment Plant.

If this item requires funding, please describe:

Funding was approved in account 50543060-542165.

Has this request been considered within the past two years?	No	If so, when?	
Is Audio-Visual Equipment Required for this Request?	No	Backup Provided with Request?	Yes

STAFF USE ONLY

Approved by Finance	Yes	Reviewed by Legal	Yes
Approved by Purchasing	Yes	County Clerk's Approval	Yes
Administrator's Approval	Yes		

Staff Notes:

Fayette County GEORGIA

Where Quality Is A Lifestyle

To: Jack Krakeel

From: Ted L. Burgess

Date: November 30, 2011

Subject: Bid #808, Total Organic Carbon Analyzer

The Purchasing Department issued Invitation to Bid #808 to purchase a total organic carbon (TOC) analyzer for the Water System. The Water System provided specifications for the TOC analyzer, based on the technology that would provide the best results. Invitations to Bid were sent directly to 12 vendors. Invitations were also extended through a local newspaper, the county's website, and Georgia Local Government Access Marketplace (www.glga.org).

Due to the technical nature of the equipment, and the desired specifications, one vendor submitted a bid (please see attached tally sheet). This was G.E. Analytical Instruments, Inc. The bid price of $29,943.00 compares favorably with the price of $24,343.70 paid 10 years ago, in 2001, for a TOC analyzer that used older technology. It is my understanding that, at present, this is the sole vendor for the TOC analyzer with the desired specifications.

Attachment

BID #808 TOC ANALYZER - TALLY SHEET

RESPONDENTS:	MANUFACTURER & MODEL UNIT PRICE	AUTOSAMPLER UNIT PRICE	STANDALONE UNIT PRICE	SAMPLE VIALS UNIT PRICE	FIRST YEAR MAINTENANCE UNIT PRICE	SHIPPING / FREIGHT UNIT PRICE	TOC ANALYZER TOTAL BID PRICE
GE ANALYTICAL INSTRUMENTS	$15,200.00	$8,900.00	$2,850.00	$103.00	$2,540.00	$350.00	$29,943.00

THE FOLLOWING COMPANIES DID NOT RESPOND

CONSOLIDATED PIPE & SUPPLY

HACH

HACH COMPANY

LAB/SCI EQUIPMENT & MATERIALS SUPPLIER

MWV SPECIALTY CHEMICALS

OI ANALYTICAL

PARKER BALSTON

PURE GREEN COATINGS

SGS LIFE SCIENCE SERVICES

SGS LIFE SCIENCE SERVICES

TOC SYSTEMS, INC.

Fact Sheet

Sievers 5310 C Series TOC Analyzers

Overview

The Sievers* 5310 C Series Total Organic Carbon (TOC) Analyzers were designed specifically for the municipal drinking water market. They offer superior accuracy and precision across a dynamic operating range of 4 parts per billion (ppb) to 50 parts per million (ppm) TOC.

The 5310 C TOC Analyzers were engineered for ease of use and cost-effective operation. They offer automated procedures such as calibration, verification, reagent adjustment, and percent removal calculation for easier, faster TOC monitoring. Available in three models—5310 C Laboratory, 5310 C On-line, and 5310 C Portable—these low maintenance Analyzers need no external reagents or gas supplies, and offer one-year calibration stability.

Key Applications

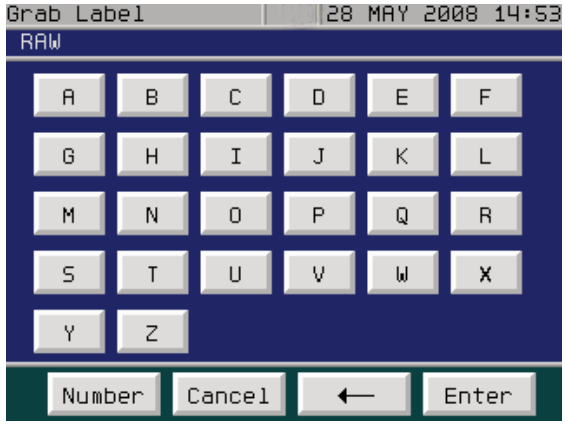
The 5310 C Analyzers monitor raw and finished water TOC for plant optimization, USEPA compliance reporting, and distribution security monitoring applications. They recover the most difficult-to-oxidize organic compounds by combining UV/persulfate oxidation with the proven Sievers Membrane Conductometric Detection Technology, a USEPA-approved methodology under Standard Methods 5310 C and USEPA Method 415.3. The 5310 C specifically calculates Percent TOC Removal in both grab and on-line mode[1] to support Disinfectant and Disinfection Byproducts Rule (D/DBPR) compliance.

The 5310 C Analyzers offer great flexibility. They can be used for continuous on-line measurement, or to analyze water samples with different sample matrices and concentrations from various points in a plant's treatment process with the highest efficiency and accuracy. The highly versatile Portable version can be moved between the lab and the plant to facilitate on-line pilot studies and full-scale testing for process optimization.

Features and Benefits

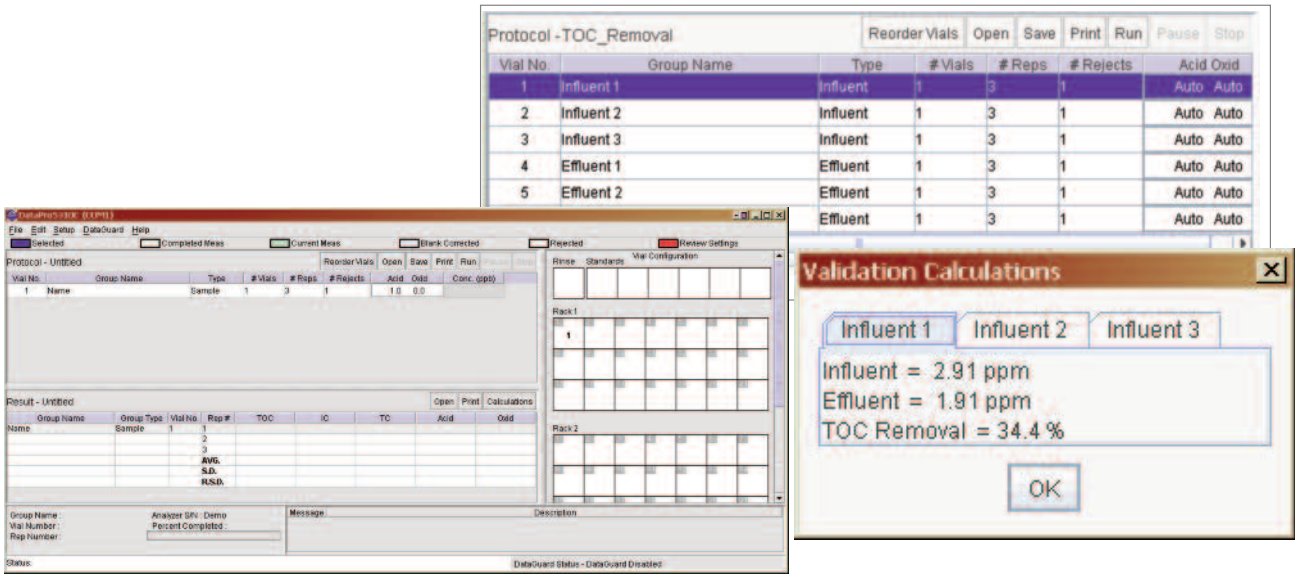
The 5310 C Analyzers features best-of-class ease of use in setup, operation, and maintenance.

- **Easy Operation** — The 5310 C Analyzers' large, color touch-screen display makes it easy to set up instrument parameters. No special training is required to operate the Analyzers.
- **Low Maintenance Requirements** — The 5310 C Analyzers prompt users automatically to perform preventive maintenance—typically only a few hours per year. The modular design simplifies consumables replacement and preventive maintenance.
- **12-Month Calibration Stability** — The 5310 C Analyzers offer 12-month calibration stability, unlike some analyzers that require weekly or even daily calibration. By following the on-screen prompts, users can select from various calibration routines.



Grab Mode Alphanumeric Labeling Screen Shot

* Trademark of General Electric Company; may be registered in one or more countries.



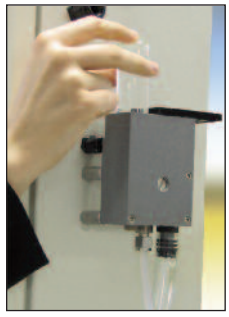
TOC Removal Percentage Protocol and Results

- **Grab Mode Alphanumeric Labeling** — This feature lets users individually label each grab sample for easy recall of specific samples in the data history or when viewing data on the instrument's screen.

- **Advanced Productivity and Efficiency** — Automated operations, such as calibration, verification, and Percent TOC Removal calculation, combine with a four-minute analysis time for enhanced productivity. The optional Autoreagent feature automatically establishes optimal reagent flow rates for each sample.

- **Automatic Determination of Percent TOC Removal** If the user selects this mode, they are prompted to insert influent or effluent grab samples. The Analyzer then automatically reports Percent TOC Removal with the individual TOC results for each vial.

- **Self-Contained Enclosures** — No external reagent or gas supplies are required. The Analyzers use self-contained Sievers internal reagent packs that can be installed in minutes to achieve up to three months of uninterrupted service.



Integrated On-Line Sampler (iOS)

- **On-Line and Grab Sampling (On-Line and Portable only)** The patented iOS System provides an easy way to test external samples and standards. Users can introduce calibration, verification, and other water samples directly without removing the Analyzer from the continuous sample source or changing the sample inlet configuration.

Accessories and Options — On-Line, Portable and Laboratory Models

Inorganic Carbon Remover (ICR)

The Sievers 900 Inorganic Carbon Remover (ICR*) complies with USEPA-approved methodology for IC removal, and continuously and reliably removes IC from incoming samples. No manual acidification/sparging is necessary and no additional work by the analyst is required. The quiet, compact integrated ICR fits within the 5310 C On-Line Analyzer's enclosure, or the stand-alone ICR mounts conveniently to the side of the Laboratory or Portable Analyzer.

Pre-Filter Kits (On-Line or Portable only)

The Sievers Pre-Filter Kits provide sample streams conditioning of raw water to ensure optimal instrument performance. Two application-specific kits are available: normal use and heavy use. Both provide 40-micron filtration.

Accessories and Options - continued

GE Autosampler + DataPro 5310 C* Software (Laboratory and Portable only)

For high-volume laboratory applications, the 5310 C can be used with the GE Autosampler. The GE Autosampler provides high-throughput sample capacity (up to 63 positions for 40- or 60-mL vials, or up to 120 positions for 35-mL test tubes or 17-mL vials). The Sievers DataPro 5310 C software integrates the GE Autosampler with the 5310 C Laboratory and Portable Analyzers to offer a host of productivity-enhancing features, such as automated calibration and verification protocols. DataPro 5310 C also gives users full sampling flexibility with custom sample protocols and user-defined sampling capabilities. The GE Autosampler's slim 28.2-cm (11.1-in) profile requires minimal bench space.

In addition to the GE Autosampler's vial positions, a standards rack provides an additional six vial positions that can be used to check standards that are typically run with each batch of samples. Through the 5310 C DataPro software, the Autosampler can be programmed to perform a cal check between samples, at a frequency determined by the user. Alternatively, the standards rack can be used for additional sample vial capacity.

The GE Autosampler also has an optional rinse station and wash pump that provides a flush of the sample inlet system with a flowing water source. This maximizes analytical performance of sample sets with widely varying concentration.

GE Autosampler Specifications	
Capacity	Configuration options include a six-position 40-mL standards rack and: Sixty three (63) 40-mL or 60-mL vials, or one hundred and twenty (120) 17-mL vials or 35-mL tubes
Power	60W (base model), 100-240 VAC, 50-60 Hz. No manual voltage adjustments are required. The power supply unit has the following approvals: CE and recognized cRU component for Canada and US.
Dimensions	H: 52.2 cm (20.5 in); W: 29.2 cm (11.5 in); D: 53.3 cm (21.0 in)
Weight	15 kg (33 lbs)
Safety Certifications	CE, ETL

Recommended System Requirements for DataPro 5310 C Software		
System Component	**Recommended Requirements**	
Operating System	**Windows 2000/XP**	**Windows/Vista and Windows 7**
RAM	256 MB	1 GB
CPU	500 MHz	1 GHz 32-bit (x86) or 64-bit (x64)
Screen Resolution	1024 x 768	1024 x 768
Screen Color	65K (high color)	32-bit (True Color)
Mouse/Pointing Device	Optional	
Serial Port	Required to connect to the Analyzer	
Printer	Optional to run program; required to print protocols and results	
CD-ROM Drive	Required for installation	

Specifications — 5310 C Laboratory, On-Line, and Portable Analyzers

Operating Specifications[2]

	5310 C Laboratory	5310 C On-Line	5310 C Portable
Range	4 ppb to 50 ppm		
Precision	< 1% RSD		
Accuracy	± 2% or ± 0.5 ppb, whichever is greater		
Sample Type	Autosampler or discrete grab sample	On-line continuous or discrete grab sample	On-line continuous, Autosampler, or discrete grab sample
Display Readout	3 significant digits		
Calibration	Typically stable for 12 months		
Analysis Time	4 minutes		
Sample Temperature[3]	1–95° C (34–203° F)		
Ambient Temperature	10–40° C (50–104° F)		
Sample Pressure[3]	N/A	Up to 250 psi	
Sample Flow Rate	N/A	50–300 mL/min	
Instrument Sample Flow Rate	0.5 mL/min		

Analyzer Specifications

	5310 C Laboratory	5310 C On-Line	5310 C Portable
Outputs	Serial (RS-232) output (2); USB port (1); parallel printer port (1); Ethernet	4-20mA output (1); alarm outputs (2); binary output (1); Serial (RS-232) output (1): USB port (1); parallel printer port (1); Ethernet	4-20mA output (1); Serial (RS-232) output (2); USB port (1); parallel printer port (1); Ethernet
Display	Quarter-VGA, color touch-sensitive LCD display		
Power	Universal Power Supply: 100–240 ± 10% VAC, 100 W, 50/60 Hz	Universal Power Supply: 100–240 ± 10% VAC, 50 W, 50/60 Hz	Universal Power Supply: 100–240 ± 10% VAC, 100 W, 50/60 Hz
Dimensions	H: 48.3 cm (19.0 in); W: 19.2 cm (7.6 in); D: 48.0 cm (18.9 in)	H: 62.4 cm (24.6 in); W: 45.2 cm (17.8 in); D: 26.4 cm (10.4 in)	H: 35.6 cm (14.0 in); W: 22.3 cm (8.8 in); D: 46.5 cm (18.3 in)
Weight	14.3 kg (31.5 lb)	16.9 kg (37.2 lb)	12.5 kg (27.5 lb)
Safety Certifications	ETL, CE		
Enclosure Rating	NA	IP-45	NA

Consumables

UV Lamp	6 months
Acid Reagent	As needed, typically 3–6 months for continuous on-line analysis, or 6–12 months for laboratory analysis
Oxidizer Reagent	As needed, typically 3-month stability; available in 150- or 300-mL cartridge
Pump Tubing	12 months
Resin Bed	12 months
Capsule Filter	As needed, up to 12 months on finished drinking water

[1] 5310 C On-Line paired with separate external multi-stream device.
[2] Stated analytical performance is achievable under controlled laboratory conditions that minimize operator and standards errors.
[3] If the sample temperature and pressure are above 60° C and 100 psi, the stainless steel iOS is required.

The Sievers 900 Series TOC Analyzers are protected by one or more of the following US and foreign patents: US 7247498; US 6271043; US 5976468; US 5837203; US 5443991; EP 0897530; FR 0897530; GB 0897530; DE 69702516.0-08 . Other patents pending

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