


PUBLIC WORKS DEPARTMENT
MEMORANDUM #2012 – 38

DATE: July 23, 2012
TO: Honorable Mayor Joyce Downing and City Council Members
FROM: William A. Simmons, City Manager
David H. Willett, Director of Public Works 
SUBJECT: CR – 77, Total Organic Carbon Analyzer

BACKGROUND

A Total Organic Carbon (TOC) Analyzer is an advanced piece of analytical equipment used to measure the quantity of organic carbon present in raw and finished drinking water. Monitoring of TOC at the water treatment facility is required by the State of Colorado and the United States Environmental Protection Agency. Total organic carbon combines with chlorine to form disinfection byproducts (DBPs) such as trihalomethanes and haloacetic acids. These compounds are known carcinogens that are regulated under the Safe Drinking Water Act and the Colorado Primary Drinking Water Regulations for the protection of human health. In-house monitoring and early control of TOC in the treatment process will help the city reduce DBPs within the distribution system. Additionally, real-time measurement of TOC will allow water plant operators to evaluate the performance of the treatment process and adjust chemicals such as Alum and Polymer to ensure the best possible treatment of the City's drinking water.

The GE-Sievers 5130C TOC analyzer is the only TOC analyzer on the market that does not require carrier gas, and has "plug and play" reagents. This allows the laboratory to minimize the costs for consumables and improves the quality of analysis by reducing error caused by the human factor. Additionally, this instrument is manufactured in Boulder, CO and all of the tech support, parts and reagents are available locally when necessary. This instrument is currently being used by many other local municipal drinking water laboratories.

On June 11, 2012, the City received one bid for the TOC Analyzer. The bid was submitted by GE Analytical Instruments and met all bid requirements, with a total bid price of \$30,197.20.

BUDGET/TIME IMPLICATIONS

The approved budget for this project, as stated in the 2012 Laboratory budget (capital equipment), Water and Wastewater Fund, is \$35,000. The total project cost is \$30,197.20.

RECOMMENDATION

Attached to this memorandum is a Resolution that, if approved, would allow the City Manager to issue a Purchase Order to GE Analytical Instruments in the amount of \$30,197.20 for the purchase of all equipment, software, hardware and installation for the implementation of the TOC instrumentation.

Staff recommends approval of this resolution.

STAFF REFERENCE

David H. Willett, P.E., Director of Public Works
Tamara Moon-Carlson, Water Resources Administrator

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tmoon@northglenn.org or 303.450.4070



CITY OF NORTHGLENN
FORMAL BID SUMMARY

BID NUMBER IFB 2012-06

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BID NAME Total Organic Carbon Analyzer Bid

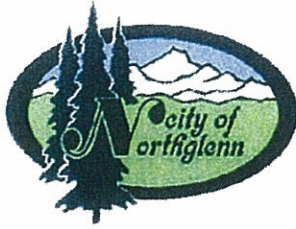
DEPARTMENT: Water Treatment Plant

	GE Analytical Instruments				
D. DUE 6/11/2012	BID RECEIVED: DATE: 6/11/12	BID RECEIVED: DATE:	BID RECEIVED: DATE:	BID RECEIVED: DATE:	BID RECEIVED: DATE:
TIME: 3:00 PM	TIME: 1:46 PM	TIME:	TIME:	TIME:	TIME:
Total Project Cost	\$ 30,197.20				

William D. Zimmerman
Buyer

Crystal Meddix
City Clerk, Deputy

6/11/12
Date



City of Northglenn
Public Works Department
11701 Community Center Drive
Northglenn, Colorado 80233
303-450-8762 Phone
303-450-8708 Fax

**CITY OF NORTHGLENN:
INVITATION FOR BID FOR
TOTAL ORGANIC CARBON ANALYZER (TOC)**

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Furnishing all materials, labor, services and related items required to complete work indicated in these specifications. The items of work to be performed shall include but are not limited to the complete supply, installation, and set-up of a Total Organic Carbon Analyzer (TOC) and all associated accessories.

1.2 QUALITY ASSURANCE

- A. The Installer must be experienced in the installation of TOC of the highest professional quality and have facilities and personnel adequate for the work specified. All work shall be performed under the direction of a skilled foreman with at least three years of experience.
- B. The Installer must verify actual field conditions prior to proceeding with the work.

1.3 SUBMITTALS

- A. Submit installation schedule.
- B. Submit manufacturer's technical data for all products.
 1. Acknowledgement that product's submitted meet requirements of standards referenced.
- C. Submit Operations and Maintenance Manuals, 3 bound copies.
- D. Submit Warranty Information.
- E. Submit required pre-installation procedures.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with the Contract Documents, the following Manufacturers are acceptable:
 1. TOC
 - a. GE Sievers 5310 C Series TOC Analyzer
 - b. or approved equal

2.2 MATERIALS

A. Total Organic Carbon Analyzer

The TOC System shall meet the following requirements:

1. Suitable for drinking water EPA regulated TOC monitoring (Standard Method 5310C).
2. Oxidation: Ultraviolet Light and Persulfate
3. Detection Technique: Membrane Conductometric
4. TOC Range: 4 ppb to 50,000 ppb TOC
 - A. System Range: 0.31 mg/L to 2.4 mg/L
5. Accuracy: +/- 2%
6. Precision: < 1% RSD
7. Sample Temperature: 1 to 95 degrees C.
8. Ambient Temperature: 10 to 40 degrees C.
9. Drift: Unaffected by drift due to ambient temperature changes or vibration.
10. Warm Up Time Required for Analysis: None required.
11. Analysis Time: Fixed 4 minute analysis
12. Calibration: Stable for one year. Can be easily calibrated in the field with reference standards. Both single point and multi-point calibration available.
13. Software: Built in software with large color touch-screen interface. Software is field upgradeable through a USB memory drive.
14. Sampling: Grab sampling through sipper tube or 40mL vial port. Can be upgraded to operate with high capacity (63 x 40mL) position Autosampler.
15. Output: RS232 serial. USB for data, system backup/restore, and upgrades. Printer port.
16. Reagents: Prepackaged low TOC phosphoric acid and ammonium persulfate. Stored on-board the instrument in cartridges that are changed every 3 to 6 months.
17. Catalysts: None required.
18. Gas Requirements: None required.
19. Auto-reagent Feature: Instrument is able to automatically optimize all reagent flow rates with no user intervention for different samples.
20. Maintenance Requirement: Typically less than 2 hours per year.
21. Size/Weight: Requires minimal bench space (7.6 inches wide x 18.9 inches deep), less than 32 lbs.
22. Warranty: One year parts and labor.
23. Installation, Training and Support: On site instrument start up available to verify the functionality of the instrument's software and hardware, run initial TOC samples and conduct training. Training includes instrument theory, operation, and maintenance performed approximately 4 weeks after receipt of order.
24. Furnishing all materials, labor, services and related items required to have a complete functional TOC Analyzer System.

- B. The TOC Analyzer System does not need to include a personal computer, monitor, and printer. Appropriate software for the operation of the TOC Analyzer System shall be included.
 - 1. Manufacturer shall furnish all necessary materials, labor, services and software controls to control the TOC and autosampler.
 - 2. The software shall allow for fully automated quantitative and qualitative analyses with standard and optional Custom Reports.
- C. System Training
 - 1. The TOC System shall include operator training covering theory, operation, and maintenance on the system and operational training in running samples. The training is to be performed on site at the Northglenn water laboratory. Training may be done consecutively or with training days spaced out for a total of 24 hours of familiarization and operation training. Training should be quoted as a separate bid item on the bid tab.

2.3 DELIVERY

- A. The delivery of the TOC System and all associated parts shall be the responsibility of the manufacturer and shall be delivered to the City of Northglenn Water Treatment Plant, located at 2350 W. 112th Ave., Northglenn, CO 80234.

PART 3 – EXECUTION

3.1 SITE PREPARATION

- A. If specific site preparation by the City is required prior to installation of the equipment, the manufacturer shall include in writing with the bid all necessary pre-installation requirements.
- B. The existing surface must be cleaned and contaminate free prior to installation.
- C. Throughout the duration of installation the Installer shall be held responsible for protection of the existing improvements to include, but not limited to the following: tables, laboratory equipment, and any other site improvements not mentioned. Repair of any damage caused by the installation will be at the Installer's expense.

3.2 INSTALLATION

- A. The TOC System shall include installation. Installation shall be quoted as a separate bid item on the bid tab.
- B. Install TOC per manufacturer's specifications.
- C. Installer shall provide performance verification of system to specifications.
- D. Install and setup provided computer with appropriate software.

3.3 CLOSE OUT

- A. Cleaning: Upon completion, the Installer shall remove all containers, surplus materials and debris, and leave the site in a clean and orderly condition acceptable to the owner.

- B. The Contractor shall provide the Engineer with 3 complete typewritten and bound sets of operating and maintenance manuals.

3.4 WARRANTY

- A. Provide warranty for the product and installation with the bid.

PART 4 – RATING CRITERIA

- A. Bids will be rating against the following rating criteria:
 - 1. Suitability for drinking water TOC Monitoring.
 - 2. TOC Range
 - 3. Carrier Gas
 - 4. Consumables
 - 5. Analysis Time

SPONSORED BY: MAYOR DOWNING

COUNCILMAN'S RESOLUTION

RESOLUTION NO.

No. CR-77
Series of 2012

Series of 2012

A RESOLUTION TO AUTHORIZE THE CITY MANAGER TO ISSUE A PURCHASE ORDER TO GE ANALYTICAL INSTRUMENTS IN AN AMOUNT NOT TO EXCEED \$30,197.20 FOR THE PURCHASE OF EQUIPMENT, SOFTWARE, AND SERVICES FOR THE TOTAL ORGANIC CARBON ANALYZER SYSTEM

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF NORTHGLENN, COLORADO, THAT:

Section 1. The City Manager is hereby authorized to issue a Purchase Order to GE Analytical Instruments in an amount not to exceed \$30,197.20 for the purchase of equipment, software, and services for the Total Organic Carbon (TOC) Analyzer System.

DATED at Northglenn, Colorado, this ____ day of _____, 2012.

JOYCE DOWNING
Mayor

ATTEST:

JOHANNA SMALL, CMC
City Clerk

APPROVED AS TO FORM:

COREY Y. HOFFMANN
City Attorney