MISSISSIPPI STATE DEPARTMENT OF HEALTH

March 17, 2015

INVITATION FOR BID

RFx NO 3160000371

The Mississippi State Department of Health plans to purchase the following, and invites your bid:

(1) Gas Chromatograph/Single Quad Mass Spectrophotometer with a Purge and Trap Concentrator and Autosampler as per attached specifications,

BID TOTAL$_____

The Gas Chromatograph/Single Quad Mass Spectrophotometer (GC/MS) will be used to analyze water samples for the Environmental Protection Agency (EPA) methods to test drinking water for chemicals in the Mississippi Public Health Laboratory (MPHL). Its primary use will be the analysis used to detect volatile organic contaminants in our state's public water systems. The Gas Chromatograph/Single Quad Mass Spectrophotometer must be capable of analyzing drinking water by EPA Methods 524.2, 524.3 and 524.4.

Equipment supplied shall be newly manufactured by a nationally known manufacturer and not previously owned. The successful bidder will be responsible for the installation of the instrument.

This bid will be awarded on a total overall review of the specifications listed. The vendor is responsible for providing relevant documentation and demonstration that the instrument quoted in response to the bid meets all of the specifications listed.

All Bids to be f.o.b. destination.

**E-Verify Compliance** – Contractor/Seller represents and warrants that it will ensure its compliance with the Mississippi Employment Protection Act (Senate Bill 2988 from the 2008 Regular Legislative Session) and will register and participate in the status verification system for all newly hired employees. The term "employee" as used herein means any person that is hired to perform work within the State of Mississippi. As used herein "status verification system" means the Illegal Immigration Reform and Immigrations Responsibility Act of 1996 that is operated by the United States Department of Homeland Security, also known as the E-Verify Program, or any other successor electronic certification system replacing the E-Verify Program. Contractor/Seller agrees to maintain records of such compliance and upon request of the State, provide a copy of each such verification to the State. Contractor/Seller further represents and warrants that any person assigned to perform services hereunder meets the employment

eligibility requirements of all immigration laws of the State of Mississippi. Contractor/Seller understands and agrees that any breach of these warranties may subject Contract/Seller to the following: (a)termination of the Agreement and Ineligibility for any state or public contract in Mississippi for up to three (3) years, with notice of such (b) the loss of any license, permit, certification or other document granted to Contractor/Seller by an agency, department or governmental entity for the right to do business in Mississippi for up to one (1) year, or (c) both. In the event of such termination/cancellation, Contractor/Seller would also be liable for any additional costs incurred by the State due to contract cancellation or loss of license or permit.

**E-Payments** – Payments by The Mississippi State Department of Health shall be made and remittance information provided electronically as directed by The State of Mississippi. These payments shall be deposited into the bank account of the Contractor's Choice. The State may, at its sole discretion, require the Contractor to submit invoices and supporting documentation electronically at any time during the terms of this agreement. Contractor understands and agrees that the State is exempt from the payment of taxes. All payments shall be in United States currency.

**Applicable Law** – This purchase shall be governed by and construed in accordance with the laws of the State of Mississippi, excluding its conflicts of law provisions, and any litigation with respect thereto shall be brought in the courts of the State of Mississippi. The vendor shall comply with applicable federal, state and local laws and regulations.

**Payment Terms** – MS Code Section 31-7-305(3) allows a state entity to pay invoices within 45 days without penalty.

Bid terms are welcome, however, they will not be used as criteria for awarding the bid.

**Prospective bidders are to contact Johnny Nelson at (601) 576-7635 or by e-mail at Johnny.Nelson@msdh.ms.gov if there are any questions regarding this bid.**

Prior to the time specified for the bid opening, sealed bids along with any other documentation required must be hand delivered or mailed to **Mississippi State Department of Health, PURCHASING DEPARTMENT, ROOM 137A, THE UNDERWOOD BUILDING, 570E. WOODROW WILSON, JACKSON, MISSISSIPPI 39216 OR POST OFFICE BOX 1700, JACKSON, MS 39215-1700.**

Bids must be received, dated and time stamped prior to 10:30 a.m., CST/DST, Friday, April 17, 2015 at which time bids will be opened. No bids will be accepted after the established bid opening time. **Bids will be opened and read at 10:30 a.m., CST/DST in Suite 134 Conference Room, Underwood Building, 570 E. Woodrow Wilson, Jackson, Mississippi.**

> In addition, bidders should also submit a bid on-line in the State of Mississippi electronic procurement system, MAGIC. In order to submit bids, bidders must be registered as a vendor in MAGIC system and have an I.D. number and password assigned at the time of registration. Help for registering in MAGIC can be found at www.mmrs.state.ms.us.

No facsimile (FAX) bids will be accepted. This bid must be signed by a person with authority to bind the bidder. Failure to comply with this provision, any other provision of this Invitation for Bid, or any provision of State or Federal Law or regulation regarding the submission of bids will cause the bid to be rejected.

Submitted bids/responses will be available for review at the bid opening.

Approval for any award of this Invitation For Bid may have to be obtained by the Mississippi State Department of Health from the State of Mississippi Public Procurement Review Board. Any award notice, successful or unsuccessful, will be provided in written form and sent to all participants of the Invitation For Bid.

The Mississippi State Department of Health reserves the right to define equals, to reject any or all bids, and waive all informalities.

**PLEASE MARK YOUR ENVELOPE: Bid Due 10:30 a.m. CST/DST, April 17, 2015.**

**RFx # 3160000371**

NAME OF COMPANY _____

QUOTED BY _____

SIGNATURE _____

TELEPHONE _____

E-MAIL _____

**Minimum Specifications for Gas Chromatograph/Single Quad Mass Spectrophotometer with a Purge and Trap Concentrator and Autosampler**

Quotations in response to the bid must meet all of the specifications below for each instrument component:

The Gas Chromatograph/Single Quad Mass Spectrophotometer must be capable of analyzing drinking water by EPA Methods 524.2, 524.3 and 524.4.

In addition it should have the following.

## Gas Chromatograph

**GC Control:**

- The GC must feature an external touch screen to provide easy accessibility to the GC and immediate interactions with it. The screen must be easy to view from multiple angles, have quick response, and feature workflow icons that follow production workflows.
- The touch screen of the GC should provide all needed data, including all temperature and pressure/flow parameters, type of carrier gas, carrier gas column pressure, flow rates, split flow, detector gas flow rates and all detector parameters.
- There must be a dedicated automated routine that allows assisted leak check procedure and a dedicated automated routine allows automatically evaluating and storing the column pneumatic resistance which will allow an automated correction of the nominal column.
- It must be able to calculate the carrier gas linear velocity and the column void time
- The GC must support multimedia files for maintenance and troubleshooting (video and images) through integrated USB ports.

**Oven:**

- The column oven must have an operating range of 25°C to 400°C with an optional sub ambient oven accessory (with liquid nitrogen or liquid CO2 as coolant).
- The oven temperature stability must be within 0.01 °C/ every °C of actual temperature.
- The oven must support a fast start-up to quickly start operations and for power savings:
- From power off conditions, programming the oven to 50 °C and with one injector and one detector installed and set to 250 °C, the GC reaches a ready condition in less than 5 minutes.
- The oven mainframe must include all the necessary electrical and gas connections for injectors and detectors without the use of tubing and wires to obstruct the oven top.
- Injectors and detectors positions are clearly defined for a quick user-installation.

**Pneumatic controls**

- Electronic pneumatic controls must be integral part of injector and detector.
- Must have no extra tubing and wires needed to operate electrical valves, and deliver carrier, detector and make-up gases to injectors and detectors.
- The digital carrier gas controller must allow operation in constant and programmed flow and pressure modes.

**Split/splitless injector**

- The Split/Splitless injector must be user-installable within a few minutes, and without any special tools. It must be able to un-installed, swapped, or replaced with another injector of the same or different kind by the operator, without any special tool.
- The injector must be able to operate with capillary, wide bore and packed columns.
- The injector must feature an optimized, modular thermal profile for split and splitless injection with a **cold head to allow for quick maintenance**.
- The injector must permits large volume splitless injection (up to 50 microliters) without requiring pressure pulse to quantitatively recover the whole sample, and without any further hardware requirement.
- Must support hot/cold split and splitless modes as well as large volume injections (solvent split) and On Column (TPOC).
- Must allow changing of injection port septa and liners without cooling the MS transfer line or ion source.
- The injector must allow timed closure/opening of the purge line.
    - Maximum Temperature: 300 °C
    - Split Ratio: up to 100:1
    - Pressure Range: 0-1000 kPa (0-145 PSI)
    - Total Flow Setting:
        - Control of split flow in 1 mL/min from 0 to 1000 mL/min
        - Purge flow from 0 to 50 mL/min
    - Capable of temperature programming.
- The injector must be capable of achieve cooling rates of 5°C/s without requiring the use of cryogenic fluids.
- Coolant-free operation even at an initial oven temperature of 300°C

**Helium Saver**

- Must have a Helium Saver accessory that is user-installable within a few minutes, and without any special tool, that – if helium is used – reduces the consumption of helium gas by the split/splitless (SSL) injector compared to standard SSL injector.
- Must be able to reduce the consumption of helium gas during the GC analytical run.
- Must be able to reduce the consumption of helium gas during the time the GC is not performing an analytical run (idle time).

## Single Quad MS Specifications

- Must have ion source that is completely removable in its entirety with all source parts (repeller, ion volume, ion lenses, pre-quad), without venting the mass spectrometer.
- Must have a spare ion source in addition to one installed inside the mass spectrometer to eliminate down time.
- Must be able to easily switch GC columns without venting the mass spectrometer.
- The ion source must be made of solid, inert, non-coated material(s).
- The ion source must be capable of heating up to 300 °C under user-selectable temperature control.
- The ion lenses, ion guide, and pre-quad must have separate heater from the ion source.
- Must have ion sources dedicated to EI.

- Electron beam collimating magnets must be present for greater ionization efficiency.
- Must have accurate regulation of emission current up to 350 μA.
- Must have integrated, lens-protected dual filament assembly with improved filament lifetime and effective regulation of emission current across the available emission current range.
- Must have constant calibration gas pressure for optimum system tuning. The analyst must not have to adjust the calibration gas pressure for tuning or troubleshooting.
- GC transfer line temperature programmable up to 300 °C for ideal transfer of components from GC to MS.
- The source must be designed to reduce excited neutral background to single counts per scan without requiring signal thresholding, background subtraction or smoothing to enhance low level detection and quantitation.
- The main quadrupole set must be protected from contamination, eliminating the need for periodic replacement of the main quadrupole set.
- The RF lens must be able to be removed without venting the mass spectrometer.
- The Quadrupole Mass Analyzer must have a Mass Range of m/z 1.5 – 1000 a.m.u. (u)
- Must have unit mass resolution
- Must have ability to acquire data in SIM mode to create and write to data file 200 scans/s or more.
- Must have ability to acquire data in Full Scan mode to create and write to data file 90 scans/s or more when scanning over range of 125 u.
- The analyzing quadrupole rods must be made of inert, non-coated, homogeneous, non-hygroscopic material, so the analyzing quadrupole rods can be cleaned.
- The analyzing quadrupole rods must be assembled in an open configuration, allowing lower local pressure inside the analyzer assembly, reducing the possibility for ion collisions with other ions and neutral molecules, increasing ion transmission.
- Must have digital electronic noise discrimination.
- The vacuum system must have a extended capacity turbomolecular pump, which is air-cooled, with control and safety interlocks integrated into the system.
- The vacuum system must also have ability to perform Automated Leak Check using a metered amount of air as reference in order to remove the effect of instrument to instrument variability due to the difference in relative sensitivity to air and cal gas ions.
- The turbomolecular pump must be backed up by a rotary vane oil fore pump with at least 3.0 $m^3$/hr pumping capacity.
- Must be able to acquire data in either centroid, profile, or nominal modes.
- Must have ability to perform the following scan modes: Full Scan (FS), single ion monitoring (SIM), alternating (simultaneous within a single injection) Full Scan/SIM, and timed acquisition (t-SIM).
- The instrument control must have the ability to alternate between Full Scan and SIM for target analysis on successive scans, allowing for confirmation and identification of unknown compounds by Full Scan and quantitative analysis of target compounds by SIM in a single chromatographic run.
- In Full Scan/SIM mode, all data must be acquired into a single data file with the ability to be parsed into separate views by the data system.
- Must have complete control for each scan segment of: scan rate, scan range, ion polarity, centroid, profile, or nominal data acquisition, emission current value, detector gain value-and specific tune file used for acquisition.

- Must have AutoSIM feature as standard, allowing for automated, user-selectable criteria-guided SIM method development from Full Scan data – acquired by AutoSIM or imported from external data file(s).
- Must have minimum installation acceptance specifications, using **Helium UHP** 5.0 as carrier gas:
    - EI Full Scan shall provide, after 1 µL injection of 1 pg/µL octafluoronaphthalene (OFN) while scanning from 50-300 u, for mass-to-charge ratio 272 an RMS S/N ≥ 1,500:1.
- Must have published, guaranteed installation acceptance specifications using **Hydrogen UHP** 5.0 as carrier gas:
    - EI Full Scan shall provide, after 1 µL injection of 1 pg/µL octafluoronaphthalene (OFN) while scanning from 50-300 u, for mass-to-charge ratio 272 an RMS S/N ≥ 100:1.

## Purge and Trap Concentrator and Autosampler

- Must have a OI Analytical System (to mirror the two systems that the lab currently has for interchangeblity of parts) consisting of
    - OI 4551A Autosampler with cooling
    - OI 4660 PH detect accessory
    - OI Standard Addition Module
    - OI 4660 Eclipse P&T Concentrator

## Software Specifications

- The systems software must be 100% compatible with Target Software.
- Must have a NIST Library
- Instrument software updates must be provided free of charge.

## Training

- Must have 2 day dedicated on-site training for analytical software.
- Must have 2 day dedicated on-site training for instrument.
- Must have off-site training for instrument and software.
- Off-site vendor training, if required, must be included in the quotation.

## Installation requirements

- Must be able to operate with electrical requirements of 120V.
- On-site installation must be included in the quotation.
- Instrument must be installed and ready for use by the customer within six weeks of receipt of a purchase order.

## Service

- Must provide a toll free telephone number for technical assistance that is accessible Monday through Friday from 8:00 A.M. - 5:00 P.M. CST/CDT.
- Must provide on-site technical assistance within 72 hours of service call.
- Must provide on-site service calls to perform preventive maintenance as required by the manufacturer.
- A service agreement must be available for purchase, after the expiration of the warranty period, throughout the life of the instrument.
- Parts must be available as part of the service agreement or for direct purchase throughout the life of the instrument.