

# **SUPPLY AND INSTALLATION OF LABORATORY INFORMATION MANAGEMENT SYSTEM (LIMS).**

## **SPECIFICATION OF A PROJECT**

Design and install LIMS programme for laboratory operations and management

## **SCOPE OF WORK**

The scope for development of the LIMS program shall comprise of the following:

- Develop a program that shall conduct the following:
  - Capture critical information about schemes as recommended by BDS and GDS
  - Capture information for water and effluent monitoring program per scheme as informed by SANS241:2015 requirements
  - Keep records of water or effluent quality results per sampling station
  - It shall be able to keep separate records of operational and compliance water and effluent quality results per sampling station
  
  - Produce history and trends of water and effluent quality results per determinants and per sampling station
  
  - Generate reports for any required period in line with SANS241:2015 for water quality standards and general or special limits for effluent quality.
  
  - It shall be able to keep separate records of operational and compliance water and effluent quality results per sampling station
  
  - It shall be able to capture history of none-compliances, be used for conducting incident investigations and track progress on remedial actions
  
  - It shall be able to provide robot indicators for potential risks and failures
  
  - Provide a simulated BDS and GDS dash board indication for water and effluent quality results compliance.
  
- The program shall be compatible with Microsoft Office programs
- The program shall be able to operate off-line and archive information in the municipal server.
- Conduct training to the municipal laboratory (Scientific Services) staff.

- Upload information in the system starting from January 2015 up to the date the system is handed over to the municipal for operation.
- Provide 3 months as and when required on job coaching assistance and system modification (if required) after the program is handed over to the municipality.

## **ADDITIONAL INFORMATION**

### **LABORATORY INFORMATION MANAGEMENT SYSTEM (LIMS)**

1. Catchments (Witbank Dam, Rietspruit Dam, Jericho Dam)
2. 3 Water Treatment Works,
3. 7 Wastewater Treatment Works,
4. Distribution,
5. Boreholes
6. Water Tankers (Municipal & Contractual), and
7. Complaints.

#### **1. Catchment, Boreholes, Water Treatment Works, 7 Wastewater Treatment Works, Distribution**

Templates will be provided to give an indication of how to upload data. Requirements from the system:

- Averages of each determinant
- % compliance based on standards
- Number of samples in total
- Number of samples complying according to standards
- Colour coding of non-compliant samples
- Graphs indicating the trends on a monthly or yearly basis for a determinant as requested
- Maximum allowable limit and control limit must be included
- Be able to add in comments/remarks
- Be able to upload documents

Feeding of information from remote on-line meters. Create an alarm system that notifies the user of non-compliance as an early warning system.

#### **2. Water Tankers (Municipal & Contractual)**

- Registration number of vehicles
- Compliance

- Colour coding

## **ADDITIONAL FUNCTIONS**

Aside from the key functions of sample management, instrument and application integration, and electronic data exchange, there are numerous additional operations that should be managed in a LIMS. This includes but is not limited to:

### **Audit Management**

Fully track and maintain an audit trail of the following:

- Stock taking/inventory to be done on system
- Methods of analysis to be on system
- Record calibration results on system
- Catchment and boreholes (needs further discussion)

### **Barcode Handling**

Assign one or more data points to a barcode format; read and extract information from a barcode

### **Chain of Custody**

- Assign roles and groups that dictate access to specific data records and who is managing them compliance
- Follow regulatory standards that affect the laboratory

### **Customer Relationship Management**

Handle the demographic information and communications for associated clients. Complaints related to the following:

- Who reported the problem (contact details, address)
- What was the problem
- How was the problem solve
- Was there a follow up done with the customer

### **Document Management**

Process and convert data to certain formats; manage how documents are distributed and accessed

### **Instrument Calibration and Maintenance**

Schedule important maintenance and calibration of lab instruments and keep detailed records of such activities

### **Inventory and Equipment Management**

Measure and record inventories of vital supplies and laboratory equipment

### **Manual and Electronic Data Entry**

Provide fast and reliable interfaces for data to be entered by a human or electronic component

### **Method Management**

Provide one location for all laboratory process and procedure (P&P) and methodology to be housed and managed as well as connecting each sample handling step with current instructions for performing the operation

### **Personnel and Workload Management**

Organize work schedules, workload assignments, employee demographic information, training, and financial information

### **Quality Assurance and Control**

Gauge and control sample quality, data entry standards, and [workflow](#)

### **Reports**

Create and schedule reports in a specific format; schedule and distribute reports to designated parties

### **Time Tracking**

Calculate and maintain processing and handling times on chemical reactions, workflows, and more

### **Traceability**

Show audit trail and/or chain of custody of a sample

### **Workflows**

Track a sample, a batch of samples, or a "lot" of batches through its lifecycle

## **4. Service and maintenance of LIMS**

### **ANNUAL MAINTENANCE SUPPORT CONTRACT COST**

- The vendor must submit an itemized listing of each component in the maintenance support contract

- Specify proposed terms of the maintenance cost. The vendor must also describe in detail the annual percentage charged for maintenance based upon each cost item. The cost item must also be defined
- Provide cost figured for annual maintenance and future releases. Describe when the maintenance will become effective