ANNEXURE AN-I

Technical Specification for Online Effulent water Quality

Item Description	Specification
	We requires Online Effulent Water Quality Station (EQMS) for measurement of COD, BOD, pH ,Tss anf Flow which meets US EPA 415.3 EPA600/R-09/122 requirements for real time monitoring of Effulent water quality system.EQMS station should have facility to communicate real-time measurement data of all Four parameters. We will provide necessary sample, power supply and drain port near analyzer location. Vendor has to assure RS232 or RS485 output port.Vendor has to supply complete EQMS system as per detailed specification mention below.
	Vendor has to provide complete analyser with the Sample Handling system. There are 2 Sampling point with the distance of 5 Meter & 500 Meter from where sample needs to analyze continuously . The required Pump, Sample Tubing & other necessary accessories will be in the vendor scope. All 2 sample needs to analyze in sequence mode 24*7.
Model	Vendor to specify
Make	Vendor to specify
Analyser Type	Cabinet Type/Probe Type, Multipara meter & with expansion capability.
Measuring Principle	COD, BOD : UV-VIS Spectroscopy with 180 to 800 NM. TSS: UV Vis Spectroscopy & Temperature with PT 100/1000 Sensor. pH: Electrochemical method
Measuring Range	COD:0 - 500 mg/l
	BOD:0 - 500 mg/l
	TSS:0 – 1500 mg/l
	pH: 0 - 14
	DO: 0 to 25 MG/L
	Temp: 0 - 80 C
Operating Pressure	Vendor to specify
Operating	Sample temperature: 0 °C to 80 °C
Operating Flow	Vendor to specify
Enclosure	IP65, stainless steel with epoxy coating or suitable.
Communication	- RS232 or RS485 output -USB port required for USB/ pen drive connection
Memory	5000 records with date and time
Display	Color TFT LCD, resolution: 320 x 240 pixels LED backlight Resistive touch screen. It should have touch screen display.
Measuring time/Response time	1 Min Programmable
Measuring Cycle	Continuous
Power supply	90- 264 VAC 50/60 Hz
Cleaning method	Automatic. Analyzer should have facility to start cleaning cycle automatically as per user defined time interval.
Calibration requirement	Zero Calibration : should have auto zero calibration facility. Analyzer should have facility to start auto zero calibration as per user defined time interval. Span Calibration: Should be perform as per laboratory measurement data.
UV Light Source	Xenon Flash Lamp
USB Port	Analyzer should have USB port for download store measurement data.
Multiplexing Facility	Analyzer should have built-in multiplexing facility to with minimum 2 sample stream maximum up to six - which allow us to connect additional sample stream to meet requirement (if any) without any cost.

Expandability of measurement	Analyzer should have facility to expand measurement to meet future compliance requirements (if any). Analyzer should have capability to add parameters like NO3 and Color without any cost. Analyzer should have capability to add other parameters as mention below; Oil in Water: Measurement Technique by UV Fluorescence Chromium, Phosphate, Silica, Chlorine or Other Heavy Metal : Measurement Technique by Colorimetric Ammonia and Hydrogen Sulfide: Measurement Technique by UV - VIS spectroscopy after gas stripping TDS, Conductivity, ORP: Measurement Technique by Electrochemical.
Additional Features	Should have Automatic Zero calibration facility which can be programmable as per user defined interval.
	UV source should be Xenon flash lamp having life more than 10 years.
	Analyser should be cabinet type for easy operation, maintenance & troubleshooting.
	USB port for downloading stored measurement data.
	Should have robust flow cell which allows very high level of suspended solid without clogging and also suitable for highly corrosive water Sample.
	Should have automatic turbidity compensation facility by a dual wavelength
	USB port is required for recorded measurement download, screen copy function (easy troubleshooting) & software update

Eligibility Criteria	
Certificate	The analyser should have TUV/MCERT/USEPA Certification
CE Certification	CE, EN61010-1, EN61326
Compliance to International Standards &	US EPA 415.3 as per EPA/600/R-09/122
	Most Preferred Direct Manufacturer/ In case of Distributor then Exclusive 5 Years Distribution Certificate is required from Original Manufacturer.
Standard supply	1. Analyser for the measurement of COD, BOD, pH & TSS
	2. Free standing panel
	3. Sample pump
	4.Tubing for drawing sample up to analyser pump
	5. PC for oprator at site with necessary software for data acquisition and storage
	6. Data acquisition system with software for transmission of data to 3 different location.
	7. Operation & maintenance manual
	8. Manufacturer test certificate
Terms N Conditions	
	2. Minimum Five installation in Karnataka and atleast One in PSUs for the various industries
	3. Purchase Order/Work Completion Certificate/Performance Certificate of the same
	4.Should comply all the clauses mentioned in the directions given in US EPA 415.3
	7. All the prerequisites required for installation in client scope should be intimated by the supplier with in a week time to the Authority by a written communication.
	8 Warranty for a period of 2 years on the complete system or Probe except Ph sensor

ANNEXURE AN-III

HLL Technical Specification for Online Effluent Water Quality Monitoring Station (EQMS)		Vendor Specification
Item	Specification	
	We requires Online Effulent Water Quality Station (EQMS) for measurement of COD, BOD, pH ,Tss anf Flow which meets US EPA 415.3 EPA600/R-09/122 requirements for real time monitoring of Effulent water quality system.EQMS station should have facility to communicate real-time measurement data of all Four parameters. We will provide necessary sample, power supply and drain port near analyzer location. Vendor has to assure RS232 or RS485 output port.Vendor has to supply complete EQMS system as per detailed specification mention below.	
	Vendor has to provide complete analyser with the Sample Handling system. There are 2 Sampling point with the distance of 5 Meter & 500 Meter from where sample needs to analyze continuously . The required Pump, Sample Tubing & other necessary accessories will be in the vendor scope. All 2 sample needs to analyze in sequence mode 24*7.	
Model	Vendor to specify	
Make	Vendor to specify	
Analyser Type	Cabinet Type/Probe Type, Multipara meter & with expansion capability.	
Measuring Principle	COD, BOD : UV-VIS Spectroscopy with 180 to 800 NM. TSS: UV Vis Spectroscopy & Temperature with PT 100/1000 Sensor. pH: Electrochemical method	
Measuring Range	COD:0 - 500 mg/l	
	BOD:0 - 500 mg/l	
	TSS:0 – 1500 mg/l	
	pH: 0 - 14	
	DO: 0 to 25 MG/L	
	Temp: 0 - 80 C	
Operating	Vendor to specify	
Operating	Sample temperature: 0 °C to 80 °C	
Operating Flow	Vendor to specify	
Enclosure	IP65, stainless steel with epoxy coating or suitable.	
Communication	- RS232 or RS485 output -USB port required for USB/ pen drive connection	
Memory	5000 records with date and time	
Display	Color TFT LCD, resolution: 320 x 240 pixels LED backlight Resistive touch screen. It should have touch screen display.	
Measuring time/Response	1 Min Programmable	
Measuring Cycle	Continuous	

Power supply	90- 264 VAC 50/60 Hz
Cleaning method	Automatic. Analyzer should have facility to start cleaning cycle automatically as per user defined time interval.
Calibration requirement	Zero Calibration : should have auto zero calibration facility. Analyzer should have facility to start auto zero calibration as per user defined time interval. Span Calibration: Should be perform as per laboratory measurement data.
UV Light Source	Xenon Flash Lamp
USB Port	Analyzer should have USB port for download store measurement data.
Multiplexing Facility	Analyzer should have built-in multiplexing facility to with minimum 2 sample stream maximum up to six - which allow us to connect additional sample stream to meet requirement (if any) without any cost.
Expandability of measurement	Analyzer should have facility to expand measurement to meet future compliance requirements (if any). Analyzer should have capability to add parameters like NO3 and Color without any cost. Analyzer should have capability to add other parameters as mention below; Oil in Water: Measurement Technique by UV Fluorescence Chromium, Phosphate, Silica, Chlorine or Other Heavy Metal : Measurement Technique by Colorimetric Ammonia and Hydrogen Sulfide: Measurement Technique by UV - VIS spectroscopy after gas stripping TDS, Conductivity, ORP: Measurement Technique by Electrochemical.
Additional Features	Should have Automatic Zero calibration facility which can be programmable as per user defined interval.
	UV source should be Xenon flash lamp having life more than 10 years.
	Analyser should be cabinet type for easy operation, maintenance & troubleshooting.
	USB port for downloading stored measurement data.
	Should have robust flow cell which allows very high level of suspended solid without clogging and also suitable for highly corrosive water Sample.
	Should have automatic turbidity compensation facility by a dual wavelength
	USB port is required for recorded measurement download, screen copy function (easy troubleshooting) & software update

Eligibility	
Certificate	The analyser should have TUV/MCERT/USEPA Certification
CE Certification	CE, EN61010-1, EN61326
Compliance to International Standards & Methods	US EPA 415.3 as per EPA/600/R-09/122
	Most Preferred Direct Manufacturer/ In case of Distributor then Exclusive 5 Years Distribution Certificate is required from Original Manufacturer.

Standard supply	1. Analyser for the measurement of COD, BOD, pH & TSS	
	2. Free standing panel	
	3. Sample pump	
	4.Tubing for drawing sample up to analyser pump	
	5. PC for oprator at site with necessary software for data acquisition and storage	
	6. Data acquisition system with software for transmission of data to 3 different location.	
	7. Operation & maintenance manual	
	8. Manufacturer test certificate	
Terms N		
	2. Minimum Five installation in Karnataka and atleast One in PSUs for the various industries	
	3. Purchase Order/Work Completion Certificate/Performance Certificate of the same	
	4.Should comply all the clauses mentioned in the directions given in US EPA 415.3	
	7. All the prerequisites required for installation in client scope should be intimated by the supplier with in a week time to the Authority by a written communication.	
	8 Warranty for a period of 2 years on the complete system or Probe except Ph sensor	

Vendor Signature with Seal