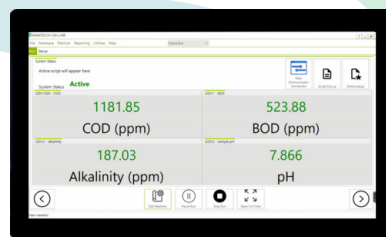
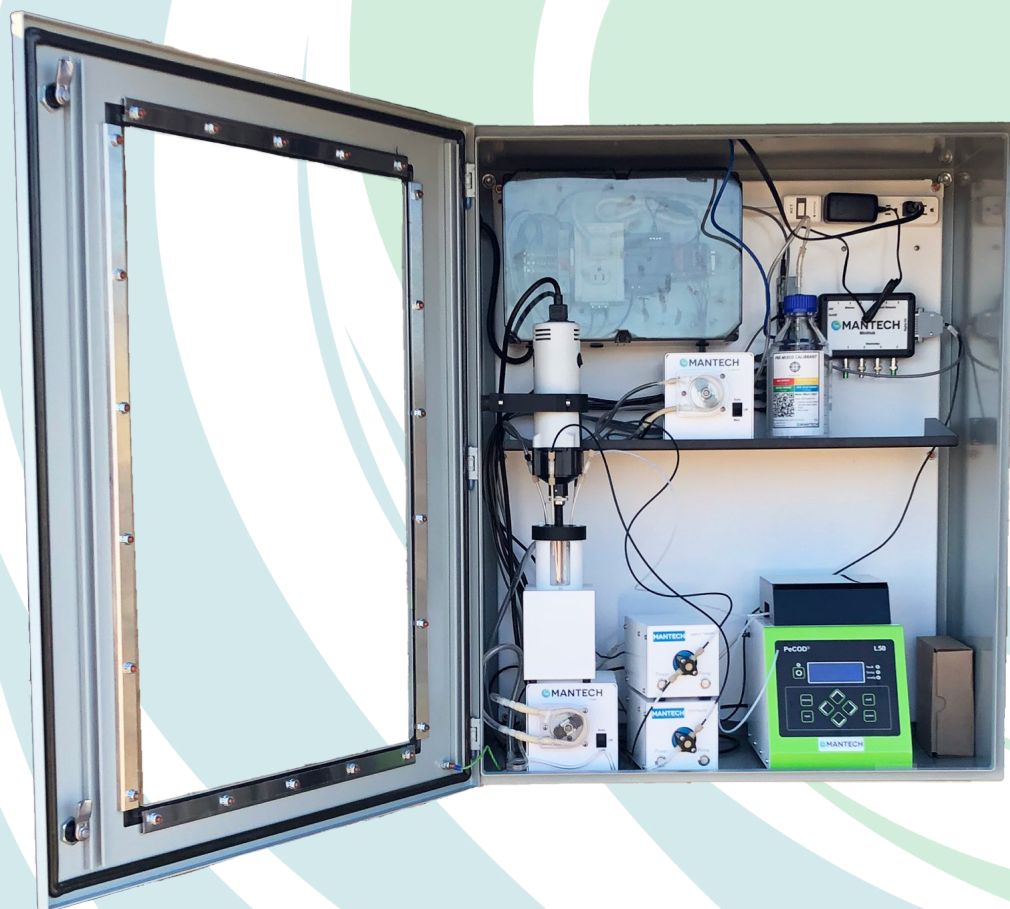




# MANTECH

OPTIMIZE YOUR RESULTS. PROTECT OUR ENVIRONMENT.



## MO1000 ONLINE PROCESS ANALYZER FOR COD/BOD ANALYSIS

# REAL TIME, HANDS FREE RESULTS

MANTECH's MO1000 Online PeCOD<sup>®</sup> analyzer utilizes the patented PeCOD<sup>®</sup> nanotechnology based photoelectrochemical method. As an autonomous system, users enjoy hands-free sampling and analysis.

## OPTIMIZE PROCESS CONTROL



## ONLINE PE<sup>®</sup>COD ANALYZER BENEFITS



### Rapid & Empirical Results

- Results strongly correlated to traditional COD and BOD results.



### Simple Run Set-up

- Schedule sampling frequency at user-selected intervals.
- Automated calibration & QC.



### Minimal System Interaction

- Receive emailed results and alerts for reagent and consumable replacements.



### User-friendly Software

- Easily view past and current results.
- Export reports as CSV files.



### Communication Protocol Supported

- Modbus TCP.



- Add additional parameters such as pH, alkalinity, conductivity, ammonia and more!



## COMPATIBLE MATRICES:

DRINKING WATER  
WASTEWATER  
GROUND WATER  
SEA WATER  
SURFACE WATER  
ELECTROPLATING BATHS

# NANOTECHNOLOGY BASED METHOD

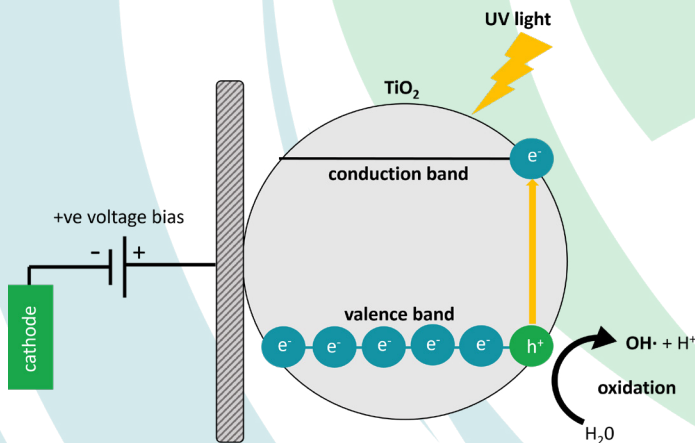
MANTECH's PeCOD® analyzer utilizes a nanotechnology-based method which obtains empirical results unlike optical or surrogate methods used to measure the oxidizability of organic matter in water.

## Rapid, Safe & Green Analysis

- Performs rapid advanced oxidation coupled with green electrochemistry to measure oxygen demand.
- No mercury or dichromate required.
- No hazardous waste produced.
- Protects health of people and environment.
- Oxidation efficiency parameters can be tuned for both COD and BOD using the same sample.



PECOD® ANALYZER



## Core Technology in the PeCOD® Sensor

- UV-activated nanoparticle TiO<sub>2</sub> (titanium dioxide) photocatalyst
- Coupled to an external circuit

## Powerful oxidation potential ensures

- Rapid results
- Complete oxidation of virtually all species
- A true measure of COD and BOD

## MULTIPLE CONFIGURATIONS, SAME TECHNOLOGY



- Troubleshoot your process with a benchtop PeCOD at a fraction of its price
- Efficiently measure multiple treatment points to diagnose cause
- Results in 10 minutes or less!

Current benchtop user? Upgrade to an online system with your existing PeCOD!

## The PeCOD® analyzer is used by a variety of industries including:

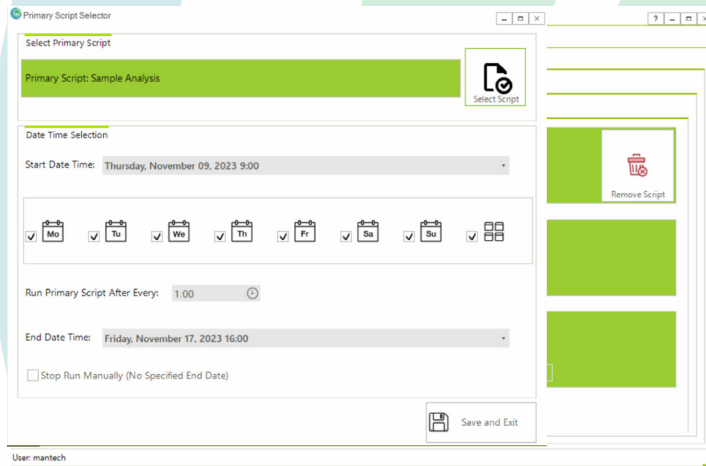
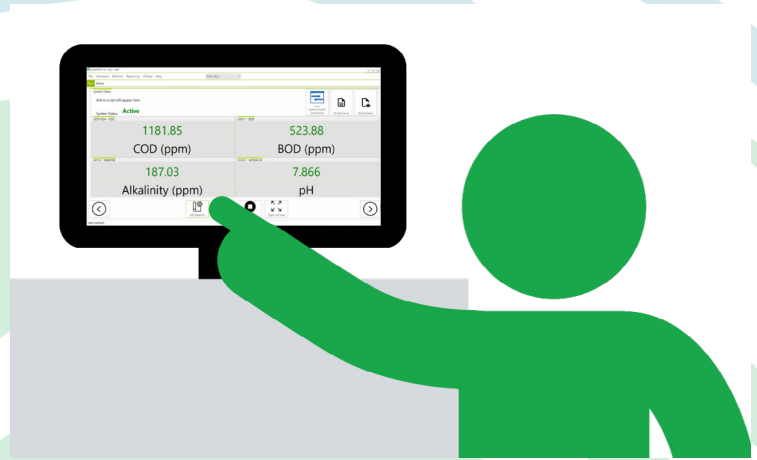
- Industrial & Municipal Wastewater Treatment Plants
- Drinking Water Treatment Plants
- Pulp & Paper Mills
- University and College Laboratories
- Food & Beverage Producers



# USER-FRIENDLY SOFTWARE

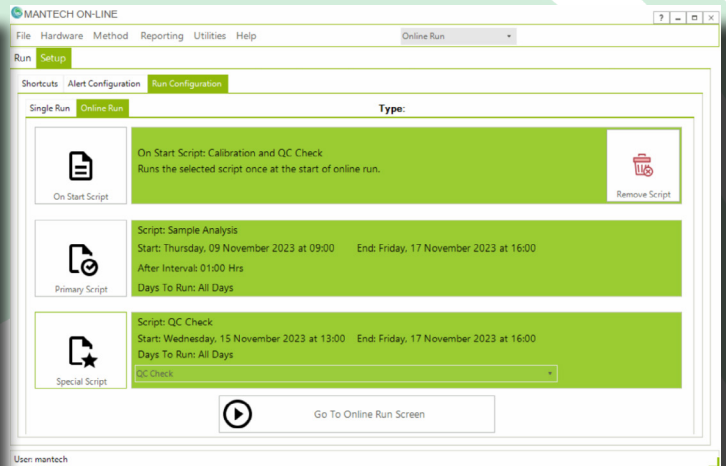
## Simple, Clear, & Concise

Our software is intuitively designed to make set-up, data viewing and data management easy to navigate.



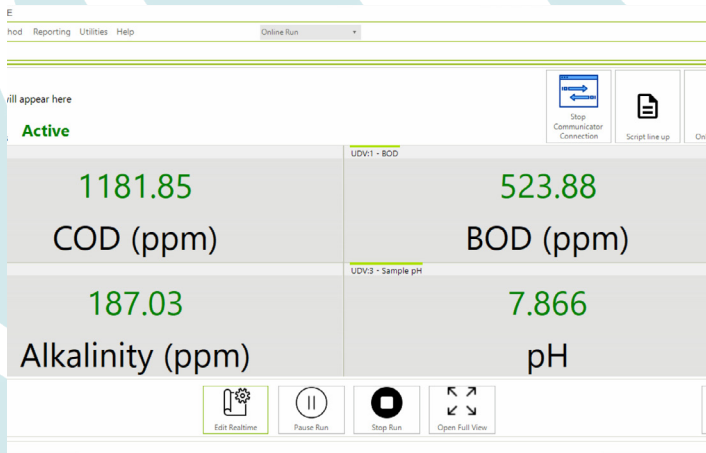
## SAMPLING FREQUENCY

Schedule sampling for every hour or at user-selected frequency.



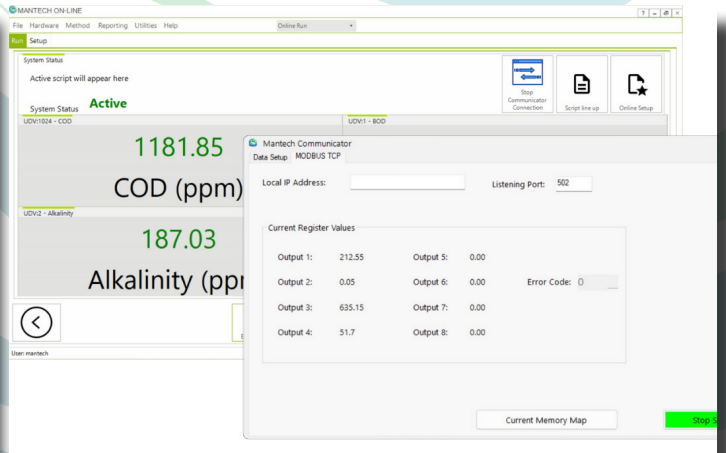
## RUN SET-UP

Set up sample analysis with automated calibrations and quality control checks.



## MONITOR DISPLAY

Review current and past results quickly on the home screen.



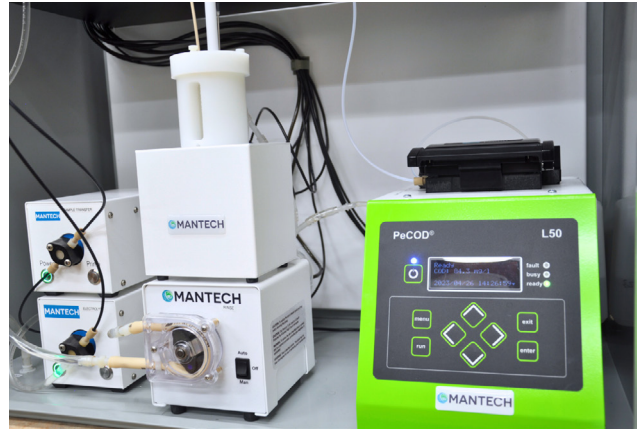
## DATA OUTPUT

Modbus TCP, export reports in CSV format and/or receive emailed results.

## MINIMAL SYSTEM INTERACTION

Built-in features minimize human interaction required with the system.

Simply set sample frequency and system operates under full autonomous control.



Send results straight to SCADA, network and your inbox.



No pre-filtration needed. Built-in automated homogenizer included if particles present.



Reminder alerts for low reagents and consumables.



PeCOD cost per sample= \$2.44 to \$3.00.

## PARAMETER ADD-ONS

Measure multiple parameters from a single system. Additional hardware added as needed.

- pH
- Alkalinity
- Conductivity
- Turbidity
- Fluoride
- Chlorine
- Nitrate
- Acidity
- Salinity
- Ammonia
- Color
- Hardness
- Permanganate Index for Oxidizability
- Langlier Saturation Index
- Oxygen Reduction Potential (ORP)
- "Optimized" TOC



100,000 step buret delivers titrant with +/- 0.2% accuracy

# Online PeCOD® Specifications

COD Method	Photocatalytic TiO2 Oxidation
Measuring Range	0.7 – 15,000 mg/L
Auto-Dilution Capability	Extends Range >200,000 mg/L
Particle Size	<50µm, automated homogenizer built-in for >50µm
pH Range	4-10 after electrolyte addition
User Control	Fully Automated via Software and Touch Screen HMI
Calibration and QC	Automatic Timed Intervals
Method Precision	≤ +/- 10%
Compatible Matrices	Water, Wastewater, Process, Natural
Sampling Method	Tank or Split Stream Reservoir (not provided by MANTECH)
Rinsing Procedures	Potable or Deionized Water Required
Waste Disposal	Non-Hazardous, Floor Drain/Carboy
Installation Options	Wall or A Frame
System Dimensions (Cabinet)	30" x 36" x 16"    76cm x 91cm x 41cm
Enclosure Material	Corrosion-Resistant Steel
Operating Temperature	5 to 50 °C
Power Requirements	110-240V 50/60Hz
Parameter Add-Ons	pH, Conductivity, Alkalinity, Fluoride, Hardness, and more!
Data Output	MODBUS Connection for Data Transfer
Additional Capabilities	Multi-Stream Analysis
	Real-Time Alerts



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