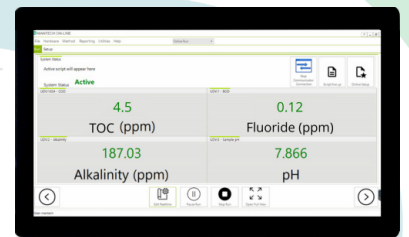
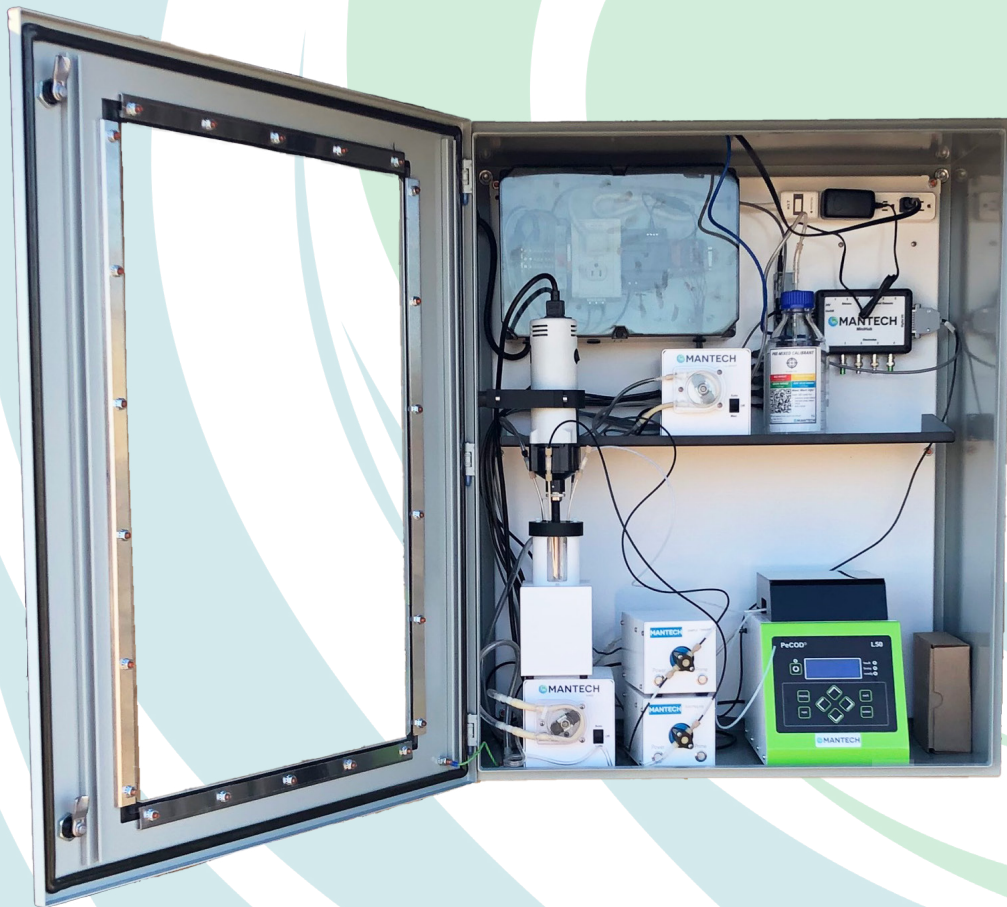




MANTECH

OPTIMIZE YOUR RESULTS. PROTECT OUR ENVIRONMENT.



MO1000 ONLINE PROCESS ANALYZER FOR "OPTIMIZED" TOC ANALYSIS

REAL TIME, HANDS FREE RESULTS

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

OPTIMIZE PROCESS CONTROL



ONLINE PE[®]COD ANALYZER BENEFITS



Rapid & Empirical Results

- Results strongly correlated to TOC results.



User-friendly Software

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



Simple Run Set-up

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



Communication Protocol Supported

- Modbus TCP.



Minimal System Interaction

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



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



COMPATIBLE MATRICES:

DRINKING WATER
WASTEWATER
GROUND WATER
SEA WATER
SURFACE WATER
ELECTROPLATING BATHS

NANOTECHNOLOGY BASED METHOD

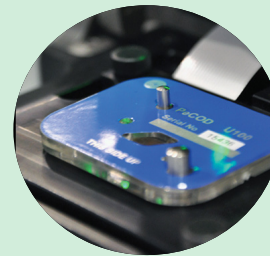
Unlike the conventional methods used to assess Natural Organic Matter (NOM) in water, MANTECH's PeCOD[®] analyzer utilizes a nanotechnology-based method which measures the chemical reactivity and associated oxidative changes in NOM. As a result it is more sensitive than TOC and UV254 to changing NOM concentrations.

"TOC on its own sheds no light on the oxidizability of the measured carbon or the amount of oxygen needed for its biodegradation." -TOC Analyzer Manufacturer

"UV254 has a bias towards aromatic organics." -UV254 Manufacturer

Rapid, Safe & Green Analysis

- Performs rapid advanced oxidation coupled with green electrochemistry for analysis.
- No need to calibrate method to the specific site matrix. PeCOD is independent of the matrix. Variations in NOM are clear.
- Conforms to ASTM International Method D8084 and is included in Health Canada's Guidance on Natural Organic Matter.



SENSOR



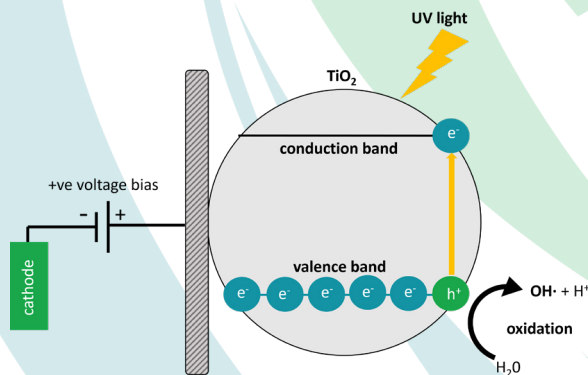
PeCOD[®] ANALYZER

Core Technology in the Sensor

- UV-activated nanoparticle TiO₂ (titanium dioxide) photocatalyst
- Coupled to an external circuit

Powerful oxidation potential ensures

- Rapid results
- Complete oxidation of virtually all species
- A true empirical measure



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 5 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:

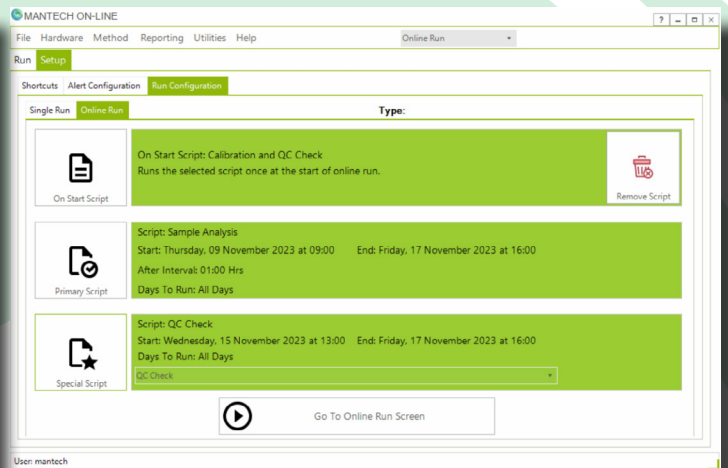
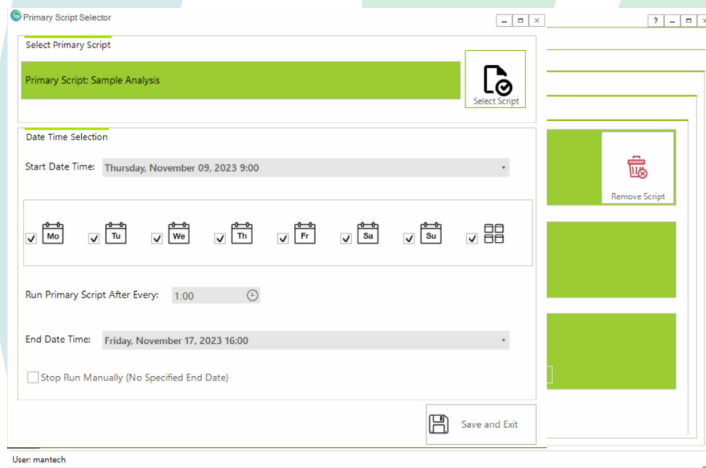
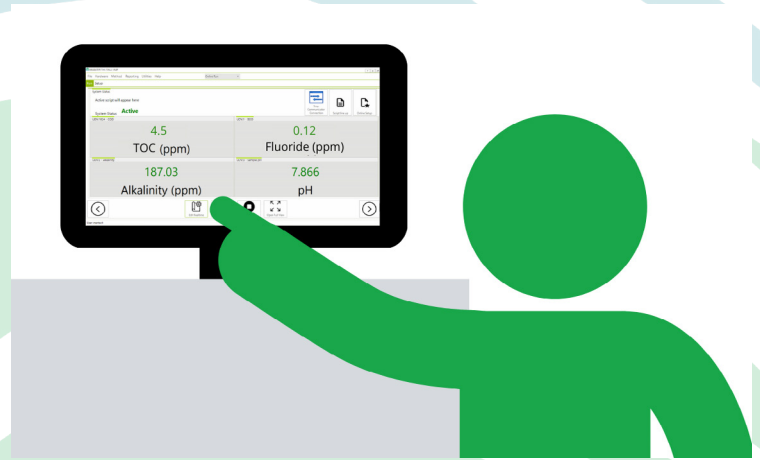
- Industrial & Municipal Wastewater Treatment Plants
- Drinking Water Treatment Plants Pulp & Paper Mills
- University and College Laboratories
- Food & Beverage Producers



USER-FRIENDLY SOFTWARE

Simple, Clear, & Concise

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

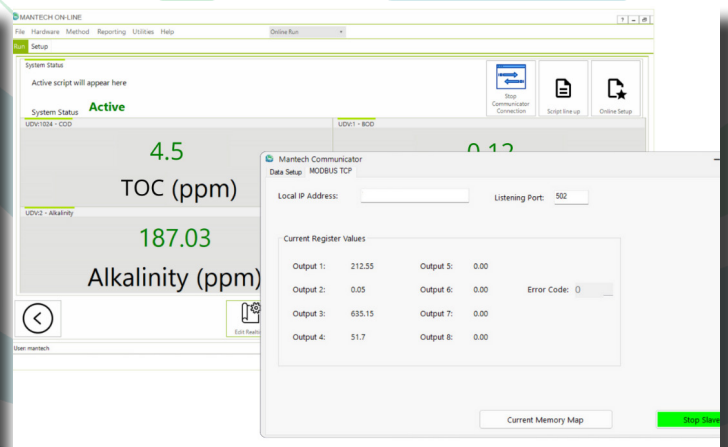
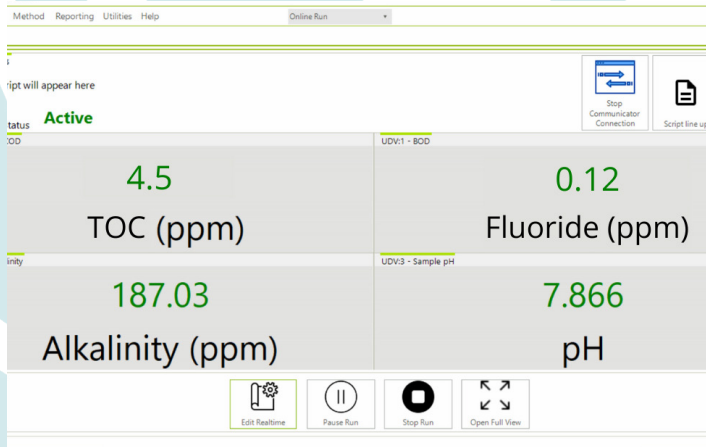


SAMPLING FREQUENCY

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

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)
- Fluorescence (e.g., humic, chlorophyll, tryptophan)



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

Online PeCOD® Specifications

Method	Photocatalytic TiO2 Oxidation
Measuring Limit	0.2 mg/L as correlated TOC
Auto-Dilution Capability	Yes
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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