



The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at ***wvOASIS.gov***. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at ***WVPurchasing.gov*** with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.

Header 3

List View

General Information | Contact | Default Values | Discount | Document Information

Procurement Folder: 380108

SO Doc Code: CRFQ

Procurement Type: Central Purchase Order

SO Dept: 0313

Vendor ID: 000000174281

SO Doc ID: DEP1800000011

Legal Name: FONDRIEST ENVIRONMENTAL INC

Published Date: 11/17/17

Alias/DBA:

Close Date: 12/12/17

Total Bid: \$59,796.65

Close Time: 13:30

Response Date: 12/01/2017

Status: Closed

Response Time: 13:05

Solicitation Description: Multi Parameter Water Quality Sonde

Total of Header Attachments: 3

Total of All Attachments: 3



Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

**State of West Virginia  
 Solicitation Response**

**Proc Folder :** 380108  
**Solicitation Description :** Multi Parameter Water Quality Sonde  
**Proc Type :** Central Purchase Order

Date issued	Solicitation Closes	Solicitation Response	Version
	2017-12-12 13:30:00	SR 0313 ESR12011700000002389	1

<b>VENDOR</b>
000000174281 FONDRIEST ENVIRONMENTAL INC

**Solicitation Number:** CRFQ 0313 DEP1800000011

**Total Bid :** \$59,796.65      **Response Date:** 2017-12-01      **Response Time:** 13:05:15

**Comments:**

**FOR INFORMATION CONTACT THE BUYER**  
 Brittany E Ingraham  
 (304) 558-2157  
 brittany.e.ingraham@wv.gov

<b>Signature on File</b>	<b>FEIN #</b>	<b>DATE</b>
--------------------------	---------------	-------------

All offers subject to all terms and conditions contained in this solicitation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	Multi parameter water quality sonde	1.00000	EA	\$59,796.650000	\$59,796.65

Comm Code	Manufacturer	Specification	Model #
83101503			

**Extended Description :** Multiparameter Water Quality Sonde In-Situ Aqua Troll 600 or Equal and accessories per the specifications. PLEASE SEE EXHIBIT A PRICING PAGE.

## Multi Parameter Sonde Exhibit A Pricing Page

Item No.	Spec. Item #	Quantity	Unit of Measure	Description	Brand/Model Bid if 'or Equal'	Unit Price	Amount
1	3.1.1	5	EA	Multiparameter Water Quality Sonde In-Situ Aqua Troll 600 or Equal	YSI EXO3 multi-parameter water quality sonde	\$4,067.25	\$20,336.25
2	3.1.2	5	EA	RDO Sensor In-Situ Aqua Troll 600 or Equal	YSI EXO optical dissolved oxygen sensor	\$1,666.00	\$8,330.00
3	3.1.3	5	EA	Sensor Port Plug In-Situ Aqua Troll 600 or Equal	Included with Item 3.1.1	\$0.00	\$0.00
4	3.1.4	5	EA	Temperature/Conductivity Sensor In-Situ Aqua Troll 600 or Equal	YSI EXO wiped conductivity & temperature sensor	\$1,402.50	\$7,012.50
5	3.1.5	5	EA	pH/ORP Sensor In-Situ Aqua Troll 600 or Equal	YSI EXO unguarded pH/ORP sensor	\$578.00	\$2,890.00
6	3.1.6	5	EA	Turbidity Sensor In-Situ Aqua Troll 600 or Equal	YSI EXO turbidity sensor	\$1,530.00	\$7,650.00
7	3.1.7	5	EA	Wiper In-Situ Aqua Troll 600 or Equal	YSI EXO central wiper	\$943.50	\$4,717.50
8	3.1.8	5	EA	15 Foot Rugged Twist-Lock Cable, Poly Vented, No Reel In-Situ Aqua Troll 600 or Equal	YSI EXO field cable, 10m	\$518.50	\$2,592.50
9	3.1.9	5	EA	Large Desiccant (ABS connector) In-Situ Aqua Troll 600 or Equal	Not Needed	\$0.00	\$0.00
10	3.1.10	5	EA	Wireless Troll Com for Android (Twist Lock Version) In-Situ Aqua Troll 600 or Equal	YSI EXO GO wireless communication device	\$845.75	\$4,228.75
11	3.1.11	1	EA	Handheld Display Unit (Android or equal)	Trimble Kenai rugged Windows 10 tablet computer	\$2,039.15	\$2,039.15
<b>TOTAL BID AMOUNT</b>							<b>\$59,796.65</b>

Company: Fondriest Environmental, Inc.

Name: Paul Nieberding

Signature: 

Date: 12/1/2017



exo<sup>3</sup>

**EXO3 Multiparameter Sonde**  
Fitted with an anti-fouling guard for  
long-term continuous monitoring.

# EXO3

THE RIGHT SONDE AT THE RIGHT PRICE

Specification Sheet  
E119 Rev. C



a xylem brand



# The right sonde at the right price!

The parameters you need, without the features you don't.

**Offering the greatest value of any sonde available in the market**, EXO3 combines the maneuverability of EXO1 with the powerful antifouling wiper of the EXO2.

EXO3 is a purpose-built sonde for monitoring major water quality parameters, including: pH, conductivity, temperature, turbidity and dissolved oxygen.

**But that's just the beginning of the great benefits EXO3 has to offer:**



The best-priced, highest-quality sonde for baseline water quality monitoring.



Flexibility to switch from continuous monitoring to spot sampling with a lighter, shorter form factor.



Integral SDI-12 communications makes it ideal for existing data collection platforms and installations, including stations that need easy replacement of our legacy 6-Series sondes.



Plug-and-play design with all existing EXO platform smart sensors, including Total Algae, fDOM, and Wiped Conductivity & Temperature.



The best antifouling wiper in the industry, protecting your sensors for up to **90 days** in the harshest conditions.



**5-ports Available**  
(4) sensors and  
(1) anti-fouling wiper




# EXO Sonde Selection Guide

	EXO1	EXO2	EXO2 <sup>s</sup>	EXO3
Available Sensor Ports	4	7	7	5
Battery Life	90 days*	90 days*	N/A	60 days*
Length	64.77 cm (25.50 in)	71.1 cm (28.00 in)	47.00 cm (18.5 in)	58.67 cm (23.1 in)
Weight	1.42 kg (3.15 lb)	3.60 kg (7.90 lb)	1.1 kg (2.43 lb)	2.0 kg (4.41 lb)
SDI-12 Communications	with Adapter	with Adapter	with Adapter	Integral
Vented Level	✓	✓		
Antifouling Protection		✓	✓	✓
Auxiliary Expansion Port		✓	✓	

\*Battery life will depend on the type of sensors and measurement frequency.

**EXO Smart Sensor Suite**

Ammonium • Barometer • Blue-Green Algae (PC & PE) • Chloride • Chlorophyll • Conductivity • Depth  
Optical Dissolved Oxygen • fDOM • Nitrate • ORP • pH • Salinity • Temperature • Turbidity




**Spot Sampling with EXO3**  
Glenn Helen Nature Preserve  
Yellow Springs, Ohio



[YSI.com/EXO3](http://YSI.com/EXO3)

See reverse for full specifications  
and contact information.





"I'm very proud of the great work our customers do using our best-in-class sonde platform."

*Stephanie A. Smith*

**Dr. Stephanie A. Smith**  
EXO Product Manager



YSI.com/EXO



EXO Handheld



EXO2<sup>S</sup>



EXO3



EXO1



EXO2



### EXO3 Specifications



Ports	5 sensor ports (4 ports available when central wiper in use) Peripheral ports: 1 power communication port
Size	Diameter: 7.62 cm (3.00 in)    Length: 58.67 cm (23.1 in)
Weight	2.00 kg (4.41 lbs) with a full payload of 4 probes, 1 wiper, and probe guard installed
Operating Temperature	-5 to 50 °C (23 to 122 °F)
Storage Temperature	-20 to 80 °C (-4 to 176 °F). Exception: 0 to 60 °C (32 to 140 °F) for pH and pH/ORP sensors
Depth Rating	0 to 250 m (0 to 820 ft)
Communications	Sonde: Bluetooth wireless technology, RS-485, and integral SDI-12 Output Options with Adapters: USB, RS-232, or Modbus
Sample Rate	Up to 4 Hz
Data Memory	512 MB total memory; >1,000,000 logged readings

### Ordering Information

599503-00	EXO3 Sonde with no depth sensor
599503-01	EXO3 Sonde with 10m depth sensor
599503-02	EXO3 Sonde with 100m depth sensor
599503-03	EXO3 Sonde with 250m depth sensor



a xylem brand

**YSI Incorporated**  
1725 Brannum Lane  
Yellow Springs, OH 45387

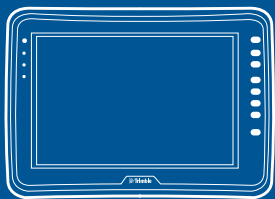
☎ 1.800.897.4151  
✉ info@ysi.com  
🌐 YSI.com/EXO

Who's  
Minding  
the Planet?®



YSI.com/EXO3

Specifications are subject to change. Please visit YSI.com to verify all specs. © 2017 YSI, a Xylem brand



# Kenai

## Rugged Tablet Computer

### KEY FEATURES

Microsoft® Windows® 10 Professional

10.1" Gorilla® Glass sunlight readable full-color display

4G LTE WWAN data capability

Choice of standard (up to 5 hours) or extended (up to 10 hours) batteries, with hot-swappable capability to meet your full workday needs

Fully Rugged IP65 and MIL-STD-810G

RS 232 DB 9 Serial Port

Connectivity options: Wi-Fi, Bluetooth, and/or 4G LTE data GSM WANN

1.46GHz dual-core Intel processor

8MP camera with LED flash for photos and videos

Integrated GPS 2-4 m (6-13 ft)

Encryption options

Two-year standard warranty

Built for mobile workers in any environment

The Trimble® Kenai™ tablet is a reliable, rugged, mobile computer designed for ease of use and high performance in the field. This is the tablet for those mobile workers who need a computer they can count on no matter where the job takes them, or how long they have to stay in the field to get the job done.

### PROFESSIONAL GRADE

Featuring the Microsoft® Windows® 10 Professional operating system, powered by a 1.46GHz dual-core Intel® Atom™ E3826 processor, the Kenai brings professional-grade computing to the field.

The Kenai provides up to 8 GB of DDR3 DRAM for all the memory needed.

Mobile workers who require large screens for forms and documents have the advantage with a capacitive multi-touch display that is for finger, glove-sensitive, or can be customized for stylus performance.

For field mapping, imagery and asset management, the Kenai comes standard with an Integrated GPS Receiver and antenna supporting several ancillary GNSS protocols (L1 GPS, SBAS, GLONASS, BeiDou) providing accuracy in the range of 2-4 meters (6-13 feet). In addition, it supports connecting an external GPS antenna and cable that can be utilized when users are on foot or inside a vehicle.

Take photographs and video of business resources and assets in the field to provide clear status visuals, and geotag to provide security as well as business intelligence. Communicate it immediately to management and meet compliance and auditing requirements in an easy, accurate computerized record.

### DESIGNED FOR TOUGH WORK REQUIREMENTS

The Kenai brings together a fully-rugged enclosure, and a host of options. Built fully rugged to IP65 standards for dust and water, and the latest MIL-STD-810G standards for drops, shock, vibration, humidity, rain or dusty conditions, Trimble Kenai was created for hard work by hard working professionals, anywhere.

With impressive full-color outdoor view-ability even in the brightest sunshine, the 10.1" WUXGA display is under Corning® Gorilla® Glass and will not be affected by rain. The tablet is also tested against prolonged solar exposure.

Designed to last for all-day performance, the Kenai boasts hot-swappable batteries so the tablet can keep going from shift to shift. Lengthen your work day with extended batteries and charge batteries in the field or office.

### CONNECTIVITY AND SECURITY

Fully cloud-capable, the Kenai provides connectivity options including Bluetooth®, Wi-Fi and 4G LTE GSM WWAN data module capability. Communicate data collected in the field in real-time through secure high speed data transfer, and access and work on the same documents and data as in the office. For security, the Kenai provides a built-in, certified Trusted Processing Module (TPM) encryption module to allow security programming for Wi-Fi and direct connect authentication. The tablet is FIPS compliant for security in a variety of mobile device management applications, and also has a Kensington Security Slot to provide field data safety.

The Kenai is designed to be easily connected to the other computer equipment most businesses use. It comes standard with an RS 232 DB 9 Serial Port as well as 2 USB 2.0 connectors. There is also an Office Docking Station for the Kenai that allows connectivity with USB peripherals such as mice, keyboards and HDMI monitors even as it's charging. A fully rugged vehicle docking station is also available.

The Kenai comes with a standard two year warranty that can be extended so business can be assured of ROI through years of performance.

The Kenai is everything mobile workers require from a rugged tablet computer in the field – built with Trimble reliability for confidence that it will perform at optimum capability no matter where the workplace may be.



# Kenai Rugged Tablet Computer

## STANDARD FEATURES

- Microsoft® Windows® 10 Professional
- Intel® BayTrail-I Atom E3826 1.46GHz dual-core processor
- Wi-Fi 802.11 a/b/g/n
- Bluetooth® 4.0
- L1 GPS, GLONASS and BeiDou with SBAS (WAAS, EGNOS, MSAS)
- 10.1" full color sunlight readable display: WUXGA [1920 x 1200]; 1,000 NITS
- 10-point multi-touch capacitive touchscreen
- IP65 Water and Dust ingress protection rating
- Rugged design certified and tested to MIL-STD-810G standards
- 3.5 mm audio jack and integrated microphone and speaker
- RS 232 DB 9 Serial Port
- 8MP camera with LED flash; supports video
- Kensington security slot
- FIPS 140-2 Compliance
- Hot swappable battery
- Programmable keypad, with LEDs for power and battery charge status
- 2 year standard warranty

## CONFIGURATION OPTIONS

- WWAN: GSM, 4G LTE data only
- Memory: 4 GB or 8 GB DDR3 DRAM
- User Storage: 128 GB or 256 GB SSD

## SOFTWARE COMPATIBILITY

- Microsoft Windows 10 Professional Operating System comes bundled with many free software applications and utilities, and users have access to over 120,000 applications available through the Windows Store as well as custom enterprise software applications.

## STANDARD INCLUDED ACCESSORIES

- Standard battery pack (49 Whr/5 hours\*)
- International AC Charger
- Capacitive stylus and tether
- Screen protector with cleaning cloth

## OPTIONAL ACCESSORIES

- Extended battery pack (98 Whr/10 hours\*)
- External battery pack charger
- Desktop docking station
- DC charger (12V/24Vdc)
- Carry case
- Hand strap
- Screen protector and cleaning kit
- Pole mount
- Capacitive touch gloves

- USB keyboard
- In-vehicle docking station (12V/24Vdc)
- GPS/GNSS antenna adapter
- In-Vehicle mounting kit

## PHYSICAL

Size (LxWxH) .....298mm x 206mm x 43mm  
(11.7in x 8.1in x 1.7in)  
Weight..... standard battery - 1.6 kg (3.5 lb)  
extended battery - 1.8 kg (4.0 lb)

## ENVIRONMENTAL RANGE

(Tested to MIL-STD-810G test standards as noted)

**Operating temperature:** -30 °C to 55 °C (-22 °F to 130 °F)

MIL-STD-810G Method 502.5, Procedure II & III (Low Temp. Operating)

MIL-STD-810G Method 501.5, Procedure II (High Temp. Operating)

**Storage temperature:** -40 °C to 70 °C (-40 °F to 158 °F)

MIL-STD-810G Method 502.5, Procedure I (Low Temp. Storage)

MIL-STD-810G Method 501.5, Procedure I (High Temp. Storage)

**Humidity:** 90% RH, MIL-STD-810G Method 507.5, Procedure II (Humidity Aggravated Cycle)

**Water & Dust Ingress:** IP65, IEC 60529 (Protected against dust, survives driving rain and water spray from any direction)

**Drops:** Survives multiple 1.22 m (4 ft) drops, MIL-STD-810G

Method 516.6 Procedure IV, Transit Drop

**Vibration:** General minimum integrity and loose cargo tests,

MIL-STD-810G, Method 514.6, Procedure I Procedure II, Category 5 (Vibration) (Vibration; Truck/Trailer-Loose Cargo Annex C, figure

514.6C-4, Table 514.6C-1, one hour)

**Altitude:** Operational at 4,572 m (15,000 ft), MIL-STD-810G,

Method 500.5, (Altitude) Procedure I, II & III

**Temperature Shock:** Survives cycles between -30 °C and 60 °C

(-22 °F and 144 °F), MIL-STD-810G, Method 503.5, Procedure I-C

**Solar Exposure:** Survives prolonged solar exposure, MIL-STD-

810G, Method 505.5, Procedure II, Solar Exposure

**Chemical Resistance:** Resistant to mild alkaline and acid

cleaning solutions fuel hydrocarbons, alcohols and common vehicle

and factory machine lubricants

## SYSTEM

**Processor:** Intel BayTrail-I Atom E3826 1.46GHz dual core

**RAM Memory:** 4 GB or 8 GB

**User Storage:** 64 GB, 128 GB or 256 GB SSD

**Display & Touch:** 10.1" full color sunlight readable WUXGA

(1920 x 1200), multi-touch capacitive touch panel, 1.3 mm

Corning® Gorilla® Glass Panel

**Standard Battery Pack:** 10.8V 4.5mAh, 49Whr/5 hour

**Extended Battery Pack:** 10.8V, 9.1mAh, 98Whr/10 hour

**Audio:** Internal mono speaker and microphone

**I/O:** 3.5 mm audio jack, USB 2.0 Host (2), RS232, docking station

I/O plate, DC input power

**Wireless:** Bluetooth® 4.0

**WLAN:** Wi-Fi (802.11 a/b/g/n)

**WWAN Modules:**

Americas: 4G: LTE-FDD, HSPA+, GSM/GPRS/EDGE

(Frequency bands B1, B2, B4, B5, B8, B13, B17, B25, BC0, BC1,

BC10)

EMEA, Australia, New Zealand: 4G: LTE-FDD, HSPA+, GSM/GPRS/

EDGE

(Frequency Bands B1, B2, B3, B5, B7, B8, B20)

**Sensors:** Gyro, accelerometer, e-compass, ambient light sensor

**Location:** L1 GPS, GLONASS or BeiDou. Accuracy: 2-4 meter

(6-13 feet) Supports real-time DGPS: RTCM v2.3 or SBAS.

**GNSS Protocols:** NMEA-0183, SBAS (WWAS, EGNOS, MSAS)

UBX binary.

## CERTIFICATIONS:

FCC, CE, UL 60950, IC (Canada), RoHS compliant. MIL461, RSS

210, CSA, RSS CSA C22.2, IEC 60950, A-Tick, C-Tick, Wi-Fi Alliance

Certified, MIL-STD-810G, IP65, GSM AT&T network compatible.

\*Battery life affected by power settings, usage patterns and

environmental conditions. Standard battery life approx. 5 hours;

extended battery life approx. 10 hours

Note: Specifications subject to change without notice.

## CONFIGURATIONS

Model	Memory		SSD Drive			4G LTE WWAN	
	4 GB	8 GB	64 GB	128 GB	256GB	None	Option
KEN46	•		•			•	
KEN48	•			•		•	
KEN88		•		•			•
KEN89		•			•		•

YOUR AUTHORIZED TRIMBLE DISTRIBUTION PARTNER

Trimble Navigation Limited  
P.O. Box 947  
Corvallis, OR 97339  
541-750-9200  
handhelds@trimble.com  
www.trimblemcs.com

PN 106515  
Rev A. 11/16/2015



www.trimble.com/mobile