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December 20, 2023

Ms. Linda C. Bridwell, P.E.
Executive Director
Kentucky Public Service Commission
P.O. Box 615
Frankfort, KY 40602-0615

Re: Case No. 2022-00301
Big Sandy Water District

Dear Ms. Bridwell:

On May 30, 2023, the Public Service Commission approved Big Sandy Water District's request to purchase 1,000 water meters with the proceeds from its Water Loss Detection and Control Loss Surcharge. In approving the purchase, the Commission stated:

The Commission notes that according to its records Big Sandy District has been out of compliance with the meter-testing standards set forth in Commission regulation 807 KAR 5:066, Section 16(1) for a number of years. Aging and untested meters often contribute to unaccounted-for water loss. Because the Commission wants Big Sandy District to return to compliance with the meter-testing regulation as soon as possible to eliminate one potential cause of water loss, the Commission finds that Big Sandy District should use surcharge proceeds to purchase the 1,000 new meters as proposed.

Pursuant to the Commission's Order, Big Sandy Water District has issued a purchase order for 1,000 Neptune MACH-10 UltraSonic Meters at an expected total cost of \$328,950. The price quote for this purchase and the specifications for the selected meter are enclosed as well as additional information regarding the meter. These meters will more precisely measure water usage and will improve the water district's ability to locate water line leaks and breaks.

Please note that the expected cost of the water meters is higher than originally estimated. The original cost estimate was prepared in Fall 2022. Inflation and material shortages occurring

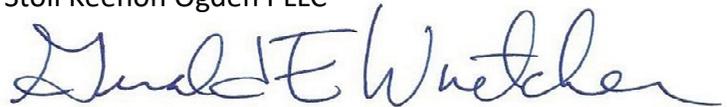
Ms. Linda Bridwell, P.E.
December 20, 2023
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since then have increased the cost of metering equipment from \$216,000 to \$275,000. Given the increased cost for the metering equipment upon which the original cost estimate was based, Big Sandy Water District conducted another review of available metering equipment and determined that the Neptune MACH 10 Ultrasonic meter would be a more cost-effective purchase. While the Neptune Meter has a greater per unit cost, it also has several features that will reduce the time necessary to read meters and increase the water district's ability to locate leaks. Equally important, the Neptune Meter has a 20-year warranty while the originally selected meter has only a 10-year warranty.

Please contact me if Commission Staff has any questions regarding the purchase.

Sincerely,

Stoll Keenon Ogden PLLC

A handwritten signature in blue ink that reads "Gerald E. Wuetcher". The signature is written in a cursive style with a large, stylized initial "G".

Gerald E. Wuetcher

GEW
Enclosures



Jimmy Blanton
Big Sandy Water District
18200 State Route 3
Catlettsburg, KY 41129

December 12, 2023

Jimmy,

Per our previous discussions I wanted to provide you with the latest pricing for the Neptune MACH-10 residential R900i water meter based upon the expected quantity to be purchased in 2024. Please find pricing below:

Item	Unit Price
5/8x3/4" MACH-10 Ultrasonic Meter with R900i Radio Transmitter	\$328.95



If you have any questions, please let me know. Look forward to seeing you again soon.

Thanks,

Bill Howell
NECO Water

Be Confident with Sustained Accuracy Over Time

Neptune® MACH 10® Ultrasonic Meter



The MACH 10® ultrasonic water meter features solid state metrology with no degradation of accuracy over time. Combined with a corrosion-resistant, lead free, high-copper alloy maincase, the MACH 10 is built to withstand demanding service conditions and deliver sustained accuracy over the life of the meter.

- Sizes 5/8", 3/4", and 1"
- Extended low-flow range for superior leak detection
- Accuracy sustained over meter life
- Can be installed in both horizontal and vertical applications
- Advanced ultrasonic technology
- Lead free, high-copper alloy maincase
- Certified to UL 327B (3/4", 1") for residential fire service applications
- No maintenance

Specifications

AWWA C715 Compliant

NSF/ANSI 61 Certified

UL327B Certified

(Optional on ¾", 1")

Application

- Cold water measurement of flow in residential potable, combination potable and fire service, and reclaim/secondary water applications.

Maximum Operating Water Pressure

- 175 psi

Operating Water Temperature Range

- +33°F to +122°F (+0.5°C to +50°C)

Environmental Conditions

- Operating temperature: +14°F to +149°F (-10°C to +65°C)
- Storage temperature: -40°F to +158°F (-40°C to +70°C)

Expected Battery Life

- 20 Years

Options

Sizes

- 5/8", 5/8" x 3/4"
- 3/4", 3/4" x 1"
- 1", 1" x 1 1/4"

Meter Options

- Potable water
- Reclaim water
- Residential fire service (combo or standalone meter service lines)

Warranty

- Neptune provides a limited warranty for performance, materials, and workmanship. See warranty statement for details.

System Compatibility

- Compatible with all Neptune endpoints. Also available as MACH 10®)R900i™ for an integrated radio solution and MACH 10®)TC for Sensus Touch Coupler compatibility.

Operating Characteristics

Meter Size	Normal Operating Range @ 100% Accuracy (+/- 1.5%)	AWWA C715 Standard Type 1	Extended Low Flow @ 100% Accuracy (+/- 3%)
5/8"	0.10 to 25 U.S. gpm 0.02 to 5.68 m³/h	0.2 to 20 U.S. gpm 0.05 to 4.54 m³/h	0.05 U.S. gpm 0.01 m³/h
3/4"	0.10 to 35 U.S. gpm 0.02 to 7.95 m³/h	0.5 to 30 U.S. gpm 0.11 to 6.81 m³/h	0.05 U.S. gpm 0.01 m³/h
1"	0.40 to 55 U.S. gpm 0.09 to 12.49 m³/h	0.75 to 50 U.S. gpm 0.17 to 11.35 m³/h	0.25 U.S. gpm 0.06 m³/h

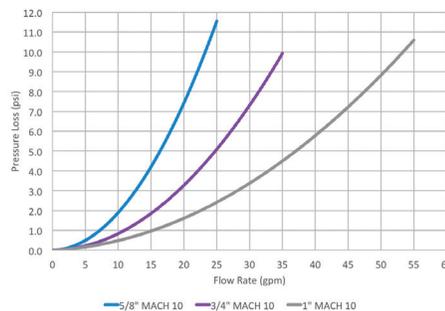
Available Units of Measure

Consumption	Rate
Gallons	GPM
Cubic Feet	GPM
Cubic Metres	LPM
Cubic Meters (International)	LPM
Imperial Gallons	GPM
Acre-Feet*	GPM
Litres*	LPM
Kilolitres*	LPM

*Unit cannot be displayed on LCD

Pressure Loss

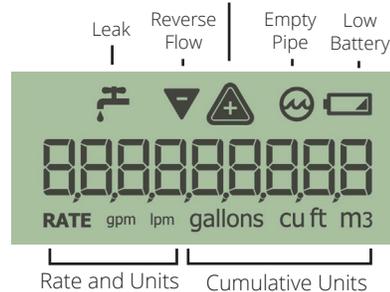
This chart shows typical meter performance. Individual results may vary.



LCD Display

9-digit display for extra resolution on manual reads.

Forward Flow + Warning for Excessive Flow



Dimensions

Meter Size	Length	Height	Threads (NPSM)
5/8"	7 1/2"	3 3/16"	3/4" - 14"
5/8" x 3/4"	7 1/2"	3 3/16"	1" - 11 1/2"
3/4"	9"	3 3/16"	1" - 11 1/2"
3/4" SL	7 1/2"	3 3/8"	1" - 11 1/2"
3/4" x 1"	9"	3 3/16"	1 1/4" - 11 1/2"
1"	10 3/4"	3 1 1/16"	1 1/4" - 11 1/2"
1" x 1 1/4"	10 3/4"	3 1 1/16"	1 1/2" - 11 1/2"

Registration

High Resolution (8-digit reading)	
0.1	U.S. Gallons
0.1	Imperial Gallons
0.01	Cubic Feet
0.001	Cubic Metres



Residential Fire Service Meter



Neptune Technology Group
1600 Alabama Highway 229
Tallahassee, AL 36078
800-633-8754 f 334-283-7293

Guaranteed Accuracy, Efficiency, and Integration

Neptune® MACH 10®)R900i™



The Neptune® MACH 10®)R900i™ is designed as an all-in-one package — pairing the MACH 10® ultrasonic meter with an integrated R900® System endpoint — adding simplicity and efficiency to your metering program. The durable, no-maintenance MACH 10, combined with reliable, integrated network connectivity, accurately measures consumption and delivers data to optimize system performance, improve customer service, maximize revenue, and support water conservation initiatives all right out of the box.

- Eliminate the hassle of endpoint programming and wiring
- Flexible meter reading options with simultaneous AMR/AMI capabilities
- Peace of mind with access to 96 days of stored history
- Prevent tampering and environmental damage with no external wires
- Improve quality of service and billing accuracy with detailed consumption data
- Reduce inventory with an all-in-one meter and endpoint package
- Eliminate meter maintenance with cutting-edge ultrasonic technology and a durable maincase
- Measure every drop with improved accuracy and low flow detection
- Pinpoint trouble areas quickly with flags that identify leaks, low battery, reverse flow, and tampering
- Improve installation efficiency with a lead free, bronze maincase that can be installed in either horizontal or vertical applications



NEPTUNE
TECHNOLOGY GROUP

#winyourday

Endpoint Specifications

Electrical Specifications

- Endpoint power: lithium battery with capacitor

Transmitter Specifications:

- Two-way endpoint
- Transmissions
 - Standard mobile message
 - Standard fixed network message
 - LoRa® fixed network message (only on LoRaWAN® model)
- Transmitter Channels:
 - 50 (R900 mobile and fixed network messages)
 - 64 (LoRa fixed network message)
- FCC Verification: Part 15.247
 - Channel Frequency: 902 to 928 MHz
 - Frequency hopping, spread-spectrum)
- Meter Reading & Flag Interval:
 - Every 15 minutes
 - Leak, Backflow, Tamper, Excessive Flow, Low Battery
- Data Logging Interval: 96 days of hourly data

Environmental Conditions

- Operating Temperature: +15°F to +149°F (-10°C to +65°C)
- Storage Temperature: -40°F to +158°F (-40°C to +70°C)
- Operating Humidity: 100% condensing, fully submersible

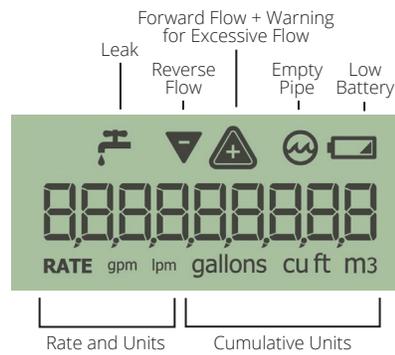
Materials

- Register Housing: Engineer Polymer
- Lens: Tempered Glass

Antennas

- Internal antenna (not available on LoRaWAN)
- Optional through-the-lid antenna
 - 18" coax
 - 6' coax
 - 20' coax

LCD Display



Registration

High Resolution (8-digit reading)

MACH 10 Size	G	ft³	m³
5/8", 3/4", 1"	0.1	0.01	0.001
1 1/2", 2", 3", 4"	1	0.1	0.01
6", 8", 10", 12"	10	1	0.1

Operating Characteristics

Meter Size	Extended Low Flow @ 100% Accuracy (U.S. gpm ± 3%)	Normal Operating Range @ 100% Accuracy (U.S. gpm ± 1.5%)	Safe Maximum Operating Capacity (U.S. gpm)	
			Normal Operation	Fire Service
5/8"	0.05	0.10 to 25	25	N/A
3/4"	0.05	0.10 to 35	35	35
1"	0.25	0.40 to 55	55	55
1 1/2"	0.30	0.80 to 125	125	125
2"	0.50	1.5 to 160	160	160
3"	0.50	0.75 to 500	500	420
4"	0.75	1.5 to 1250	1250	1100
6'	1.0	2.0 to 2000	2000	1800
8"	4.0	6.0 to 4000	4000	4000
10"	6.0	10.0 to 6500	6500	6500
12"	8.0	12.0 to 8000	8000	6500

Meter Specifications

- See Neptune MACH 10 product sheets for detailed meter specifications

Options

Compatibility

- Available for 5/8"-12" MACH 10
- Handhelds with belt clip transceiver – mobile RF
- Mobile data collector RF
- Gateway – fixed network RF
- LoRaWAN gateway – fixed network

Units of Measure

- U.S. Gallons, Cubic Feet, Imperial Gallons, Cubic Metres

Warranty

- Neptune provides a limited warranty for performance, materials, and workmanship. See warranty statement for details.



neptunetg.com

Neptune Technology Group
1600 Alabama Highway 229
Talladega, AL 36078
800-633-8754 f 334-283-7293

Streamline Operational Efficiencies

Neptune R900® System: Mobile Data Collector and Software



The mobile data collector provides fast, accurate automatic water meter reading to preserve resources and streamline operational efficiencies. Critical data is transformed into actionable information to help identify hidden causes of loss and optimize operational efficiency. Access to consumption data and alerts of leaks and backflow conditions aid in proactively addressing high bill complaints, reducing delinquent payments, and eliminating write-offs.

The R900® System is designed to easily accommodate and support past generations of meters, encoder registers, and data collectors – preserving your asset investments and offering the flexibility to incorporate future innovations as needed.

- Reliable, accurate, and field-proven
- Seamless compatibility with all generations of R900® endpoints
- Automatic, rugged, portable, easy-to-use
- Improves accuracy, increases reader safety, and reduces reading time
- Common core code base for faster availability of new features and functionalities
- Save money with flexible hardware connection options via Bluetooth or USB
- Makes Automatic Meter Reading (AMR) safer and simpler
- Small enough to fit in any vehicle

Specifications

Physical Specifications

- Dimensions:
8" (width) x 3.15" (height) x 11" (length excluding connections and handle)
- Weight: ~5 lbs

Electrical Specifications

- Power consumption: < 1A
- Power supply: 12V DC via vehicle power source adapter

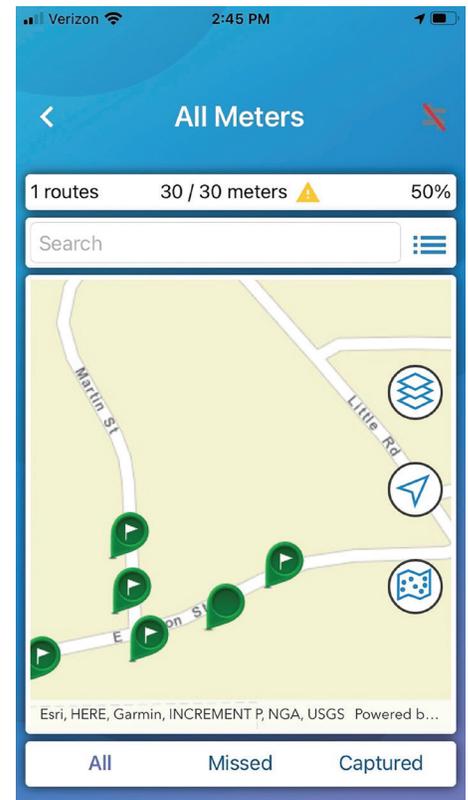
Neptune recommends the following mobile computing hardware specifications for optimal performance:

- 12.1" XGA (800 x 600) minimum
- 89-key keyboard
- Operating System:
 - Windows® 7 Professional 32 & 64
 - Windows® 8 Professional 32 & 64
 - Windows® 8.1 Professional 64
 - Windows® 10 Professional 64
- .Net Framework 4.5 or higher
- Processor: Intel Pentium 1.7 Ghz or faster processor

- Memory: 1 GB minimum
- Communication
 - Internal 802.11 b/g wireless LAN
 - Windows Wireless Connection Manager (if Bluetooth connection to the receiver is desired, Bluetooth v2.1 + EDR required)
- USB 2.0
- GPS receiver (required for the mapping and mobility module)
- Minimum of 2 GB of available hard drive space

Environmental Conditions

- Operating temperature:
-4°F to +122°F (-20°C to +50°C)
- Storage temperature:
-40°F to +185°F (-40°C to +85°C)
- Operating humidity: 5 to 95% non-condensing relative humidity



neptunetg.com

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1600 Alabama Highway 229
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Jimmy Blanton
 Big Sandy Water District
 18200 State Route 3
 Catlettsburg, KY 41129

December 6, 2023

Jimmy,

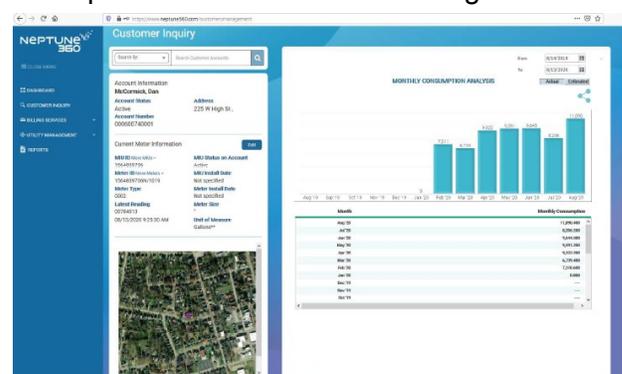
Per our previous discussions I wanted to provide you with information on migrating to 360.

The first stage is Mobile Drive By AMR, you can still add Gateways for Fixed Network coverage at any time. The read history data is stored for two years. So you at least have a database of monthly readings to view when you pull up any mobile account in the software, an example is below:

Example: Mobile 360 Dashboard

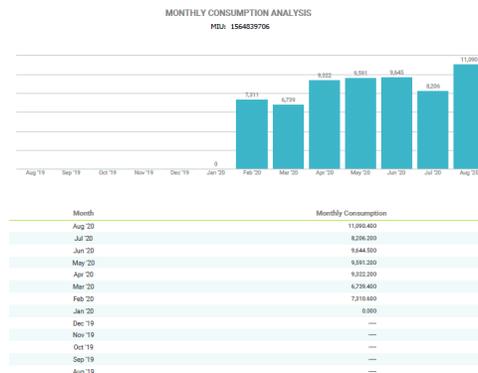


Example: Mobile 360 Customer Page



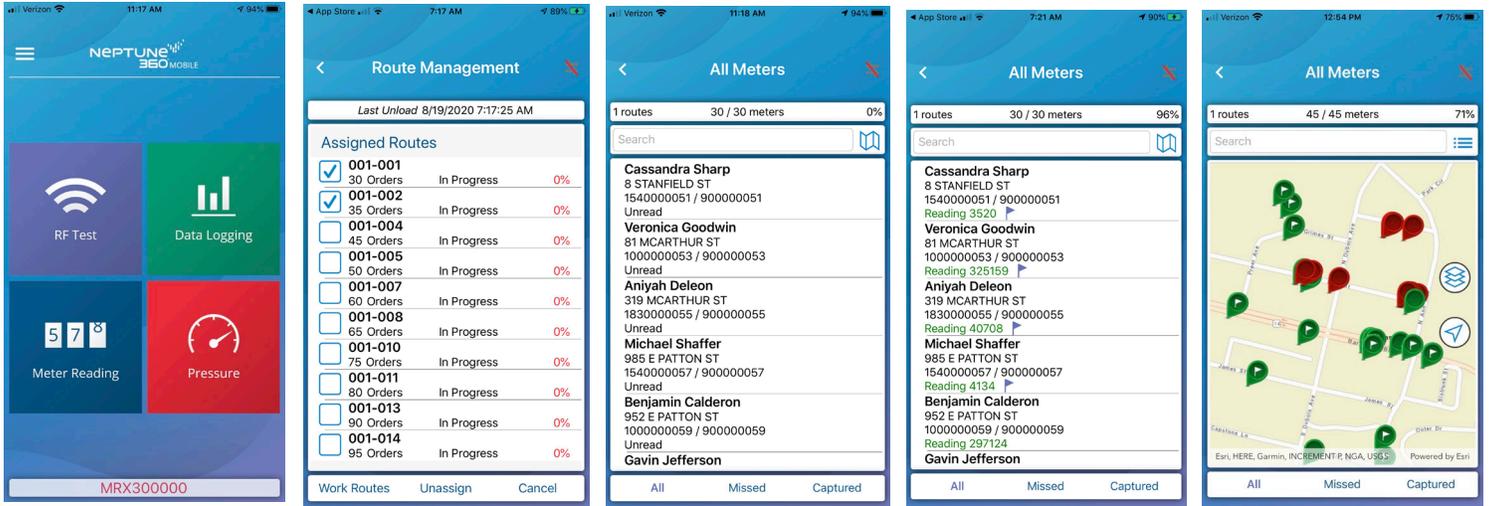
The dashboard has been improved over NSIGHT at the office to show top ten users, overall system consumption for the read cycle, and alert events such as critical usage (leak), reverse flow, etc.. You simply click on the event to get a report. As you can see on the customer page (above right) you will not only see a monthly usage graph when you pull it up (which can be emailed to the customer) but you also get a map screen showing the location if the GPS coordinates are available for the customer.

Below is an example of a monthly consumption report shared from the customer page that can be emailed as a PDF to the customer.





The other benefit of 360 is the ability to use the 360 App on iOS and Android devices. Reads can be unloaded over the air by syncing Unload from the iOS or Android device. The mapping feature has been improved and you will have a map screen available (using your GPS coordinates). Below are some screen shots from the 360 App being used on an iPad. You can see the routes selected, the customers within the route, the readings after capture, and the map screen. It has “All”, “Missed” and “Captured” screens just like the laptop software.



Neptune 360 is hosted software that stores 2 years of data per customer. It has an annual subscription fee that includes all maintenance, support, and upgrades in addition to the hosted data secure storage.



The pricing for upgrading to the 360 software is below:

360 Software Version	Annual Subscription
360 AMR Hosted Meter Reading Software Subscription (Includes Maintenance/Automatic Updates)	\$6,450.00
Implementation and On Site Training	\$1,650.00
MRX920 Mobile Unit	\$8,785.00

If you have any questions, please let me know. Look forward to seeing you again soon.

Thanks,

Bill Howell
NECO Water

MACH 10[®] Ultrasonic Meter Warranty Statement



1. Terms of Limited Warranty

With respect to its Neptune MACH 10[®] water meter ("MACH 10"), Neptune Technology Group Inc. ("Neptune") warrants that for meters sold for potable water or combined potable water and residential fire service applications, the MACH 10 lead free bronze maincase, electronics, and battery will be warranted to be free from manufacturing defects in workmanship and material as follows:

- a) Lead Free Bronze Maincase** Neptune warrants that the MACH 10 lead free bronze maincase will be free from manufacturing defects in workmanship and material for the life of the meter.
- b) Electronics (PCB, Transducers, LCD, and Battery)** Neptune warrants that the fully integrated MACH 10 meter electronics and battery shall be free from defects in manufacture and design for a period of twenty (20) years from the "date of shipment" (such period being the "Warranty Period"). Neptune shall not be responsible for any defects in the MACH 10 (whether due to design, materials, manufacture, or otherwise) which manifest themselves after the expiration of the Warranty Period. Neptune will repair or replace a non-performing MACH 10 meter free of charge for the first ten (10) years and at a discount off of the then-current contract price, or the then-current list price, whichever is less, during the remaining ten (10) years per the table at right. The MACH 10 warranty does not include the external housing that encapsulates the electronics.

2. MACH 10 Meter Accuracy

Neptune MACH 10 meters are warranted to meet or exceed meter accuracy of $\pm 1.5\%$ for the published ranges set forth in Neptune's current product sheet in existence at the time of the date of shipment of the MACH 10 meter for 20 years from date of shipment. Neptune further warrants the MACH 10 to meet or exceed extended low-flow accuracy of $\pm 3\%$ for the published ranges set forth in Neptune's current product sheet in existence at the time of the date of shipment of the MACH 10 meter for 20 years from date of shipment.

3. Warranty Returns

If a Neptune MACH 10 meter fails an accuracy test during an applicable warranty period, it may be returned to Neptune for evaluation. Any MACH 10 meter proved to the satisfaction of Neptune to have failed the warranties set forth in this certificate will, at the option of Neptune, be repaired or replaced at no cost to the customer. An accuracy test shall be conducted by the customer according to then-current AWWA testing standards. Any meter being returned for repair to Neptune under this performance warranty must be returned with a copy of the customer's test results. If the meter is returned to Neptune without a copy of the test results or if Neptune's factory test shows the meter to meet Neptune's published accuracy specifications, then the customer will be charged a nominal testing fee by Neptune in such cases. If, after the meter has been tested by Neptune, Neptune determines that the meter has failed the warranties set forth in this certificate, then Neptune will repair or replace the meter at Neptune's option.

Year of Failure	MACH 10 [®] Replacement Price Discount*
1-10	Full replacement: 100%
11	50%
12	50%
13	40%
14	40%
15	30%
16	30%
17	20%
18	20%
19	10%
20	10%

**Replacement price discount percentages will be applied towards then-current contract prices or then-current list prices, whichever is less, in effect for the year product is accepted by Neptune under warranty conditions. Replacement MACH 10 meters are warranted for one (1) year after date of shipment or balance of original MACH 10 meters warranty, whichever is greater.*



4. Responsibility Limited to Costs of Replacement and Repair

If the MACH 10 fails to meet the warranties set forth in Sections 1 and 2 of this Certificate of Warranty, then Neptune, at its option, shall repair or replace the MACH 10 or part thereof, provided that (a) the MACH 10 is delivered to a Neptune representative, (b) the MACH 10 is accompanied by a Return Material Authorization (RMA), and (c) all costs of delivery to Neptune are assumed by the purchaser of the MACH 10. Neptune's liability is limited to its costs of replacement and repair of the non-conforming MACH 10, and without limitation, this warranty does not include field replacement, labor, or materials costs, which are the responsibility of the customer. Damages resulting from miscalculation of water usage or lost revenue or profit are not recoverable from Neptune. It is the responsibility of the customer to periodically verify the operation and accuracy of its meters.

5. Warranties are Inapplicable under Certain Conditions

The warranties set forth in this Certificate of Warranty do not apply to any MACH 10 meter that has been damaged by, or subjected to, conditions which, in the opinion of Neptune, have affected the ability of the MACH 10 to perform, including but not limited to: misuse; improper handling, application, or installation; excessive operating conditions; foreign materials in the water; aggressive water conditions; tampering or unauthorized repairs or modifications; accidental or intentional damage; and acts of God. This Certificate of Warranty shall not apply if product is placed in non-recommended installation, is connected or altered by other than Neptune recommended procedures, or is read by equipment not approved or licensed by Neptune. Neptune makes no claims concerning operability and/or compatibility or third-party reading systems. In addition, this Certificate of Warranty shall not apply if third-party reading equipment is believed to have caused damage to the MACH 10. In order to determine its liability, if any, under this Certificate of Warranty, Neptune shall have the right to inspect any MACH 10 meter or part thereof that is claimed to be defective at Neptune or other location designated by Neptune.

THE ABOVE WARRANTY FOR THE MACH 10 WATER METER IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY NEPTUNE WITH RESPECT TO THE MACH 10. ALL OTHER WARRANTIES, CONDITIONS, TERMS, REPRESENTATIONS, OR OTHER LEGALLY OPERATIVE PROVISIONS CONCERNING THE MACH 10 ARE HEREBY EXPRESSLY EXCLUDED, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY, CONDITION, TERM, AND REPRESENTATION OR OTHER LEGALLY OPERATIVE PROVISION AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THIS PARAGRAPH IS EXPRESSLY INTENDED TO EXCLUDE FROM THIS CONTRACT ALL STATUTORY AND COMMON LAW WARRANTIES TO THE MAXIMUM EXTENT PERMITTED BY LAW. TO AVOID ANY AMBIGUITY OR MISUNDERSTANDING, ALL PROBLEMS ARISING WITH A MACH 10 WATER METER AFTER THIS POINT SHALL BE BUYER'S RESPONSIBILITY. NEPTUNE'S LIABILITY SHALL IN NO EVENT EXCEED THE PURCHASE PRICE OF THE MACH 10 WATER METER. NEPTUNE SHALL NOT BE SUBJECT TO AND DISCLAIMS THE FOLLOWING: (1) ANY OTHER OBLIGATIONS OR LIABILITIES ARISING OUT OF BREACH OF CONTRACT OR OF WARRANTY, (2) ANY OBLIGATIONS WHATSOEVER ARISING FROM TORT CLAIMS (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR ARISING UNDER OTHER THEORIES OF LAW WITH RESPECT TO PRODUCTS SOLD OR SERVICES RENDERED BY NEPTUNE, OR ANY UNDERTAKINGS, ACTS, OR OMISSIONS RELATING THERETO, AND (3) ALL CONSEQUENTIAL, INCIDENTAL, SPECIAL, MULTIPLE, EXEMPLARY, AND PUNITIVE DAMAGES WHATSOEVER.