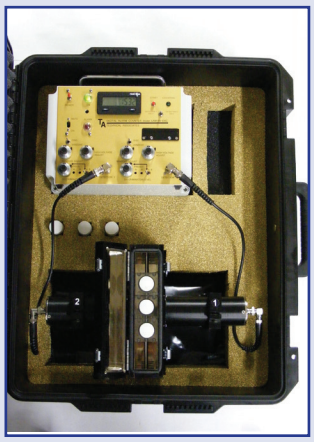
Technical Associates - Military Water Safety Test System - Portable

GENERAL DESCRIPTION:



Military personnel endure dangerous conditions including drinking water during deployment. The armed services have strict rules for testing water to ensure portability. The radiation tests are rigorous. The Military Water Safety Test System –Portable, SSS-22RLX, measures water to these requirements as proven in U.S. Army testing conducted at White Sands Missile Base.

The portable Military Water Safety Test System has on-board data log capability for easy export and PC interface with hard copy printer are optional. The Military Water Safety Test System has a 3 Vial capacity for faster thru-put and easy comparison sample to calibration standard or to background. This is an all-in-one unit thus enhancing portability.

End Users: U.S. military drinking water quality units, state and federal health agencies, small labs.

TECHNICAL DESCRIPTION:

The Military Water Safety Test System accurately quantitatively measures all Beta emitters, including Tritium below 10,000pC/L andCarbon-14 and low energy Gamma and Alpha emitters. The most sensitive method of detecting and quantitating beta emitting isotopes is to mix the sample with liquid scintillation fluor and count each individual scintillation event with a photomultplier counter. Scintillation counts detected by PM tubes are processed by a fully adjustable single channel analyzer centered on the energy peak of the isotope being measured. Followed by an energy analyzer which further selects the pulses and delivers the true signal. Detection cell optically coupled to selected photomultiplier tube. A 3 Vial capacity provides a faster thru-put and easy comparison sample to calibration standard or to background.

The Military Water Safety Test System deletes both higher energy pulses from background radiation and lower energy counts from the PM tube or circuit noise. The pulses are then fed to a digital scaler and optional digital printer. (Thus allowing long count times for measurement of very minute samples as well as completely eliminating artifacts caused by rate meter time constants.) Optional USB interface to most scientific or personal computers or data stations.

Tier Selection

Final tier assignment is based on overall product score.

Top Tier Second Tier Third Tier Fourth Tier Bottom Tier

RANKINGS

	Biological	Chemical	Radiological
FIELD USE System	N/A	N/A	Third Tier
MOBILE Laboratory	N/A	N/A	Second Tier
DIAGNOSTIC Laboratory	N/A	N/A	Top Tier
ANALYTICAL Laboratory	N/A	N/A	Top Tier

Survey Source

N/A

CONTACT INFORMATION

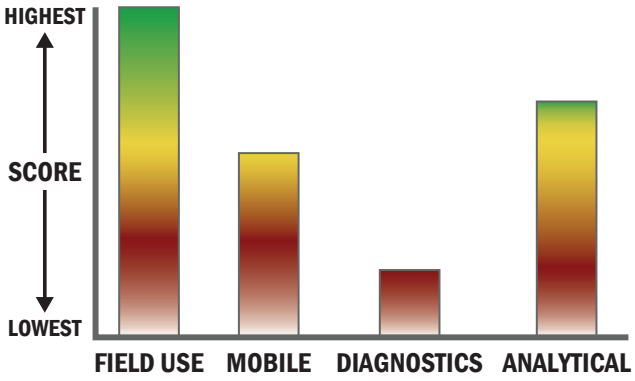
Technical Associates
7051 Eton Ave.
Canoga Park, CA 91303
POC: Robert Goldstein, President
tagold@nwc.net 818-883-7043

COST

- $23,400/system
- $5/analysis

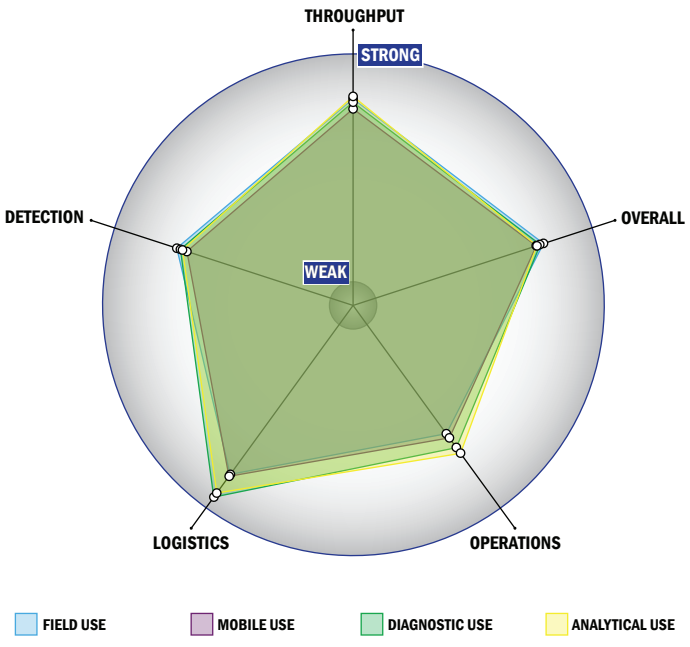
Scoring Analysis

System scores are compared across the four scenarios and ranked from highest to lowest.



Impact Chart

The Impact Chart is a spider graph representing specific categories and designed to give the reader a visual depiction of how a particular system is expected to operate across the four different scenarios. The score for each of the seven categories is presented as the percentage of the total possible score. Higher category scores extend the spokes of a graphic toward the outer edge of the chart. The area graphed for each of the four scenarios relates to how well the system performed in that scenario. Graphics for each of the four scenarios are super-imposed for ease of comparison.



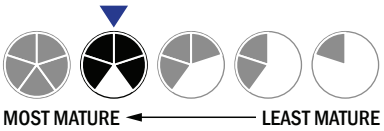
Evaluation Criteria

Throughput:

- Between 2 and 15 minutes for detection
- Multiple samples, multiple tests/sample per run
- System is continuous and provides real time analysis with no defined tests/samples
- The system or device is currently fully automated
- Device or system is intended for multiple detection assays
- 0-1 solutions, buffer, eluents, and/or reagents
- 0 components
- Less than 5 minutes is required for set-up
- 3-5 steps are required for detection

Logistics:

- An afternoon of training and some technical skills required
- Approximately the size of a carry-on luggage suitcase
- Between 1 and 5 kg
- Satellite and wired connections are available
- System or device uses batteries
- 4-8 hours battery life



Operations:

- Can be used from 4 °C to 37 °C
- Performance is not influenced by relative humidity
- Greater than 3 years shelf life
- Greater than 10 years expected life
- Results can be viewed in real-time
- The system is not capable of autonomy
- The system software is open and available for modification
- The system hardware is open and available for modification

Detection:

- Greater than 250 µL
- Excellent specificity. System has occasional false alarms under certain conditions (<2%)
- Only total dose and dose rate
- Down to background level radiation for dose rate
- System is used for surveying