

Customer feedback

University of West England



Customer feedback

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Principal Investigator: Prof. Darren M Reynolds
Co-Investigator: Dr. Robin MS Thom
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Executive Summary

There is a requirement for sustainable, reliable and robust water treatment systems that are a suitable scale for the community they serve. The application of conventional centralised water and sanitation systems are unsustainable for many communities for low and middle-income countries due to demographics, infrastructure requirements, associated high maintenance costs and localised and diverse governance system. Decentralised off-grid drinking water treatment systems exhibit modular characteristics that allow the production of drinking water at different scales.

The main aim of this study was to undertake the first long-term and continuous trial of the newly developed PAqua 1000D-2 water purification unit. This system (NINJA) was installed into a drinking water treatment platform (DWTP) at UWE, Bristol in October 2019. The trial reported here was conducted between November 2019 and February 2020. This trial assessed the ability of the system to run continuously, without human intervention, and whether this technology platform could provide biologically safe drinking water from a heavily contaminated raw water source.

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1.1 Aim

The main aim of this trial was to establish and maintain long-term continuous operation of a newly engineered compact water treatment system, PAqua 1000D-2, to provide biologically safe drinking water. The PAqua 1000D-2 has been incorporated into a decentralised water treatment system, NINJA-DWTP, which works on the core principles of ultrafiltration and ECAS biocidal dosing for disinfection. By developing a modular off-grid decentralised water treatment technology, utilising ECAS for disinfection, we aim to provide biologically safe drinking water from a heavily contaminated water source. Previous trials of this technology (Clayton et al., 2019b) have demonstrated the potential for a compact and high throughput system to produce large volumes of high quality drinking water.

1.2 Objectives

- Assess the ability of the NINJA-DWTP for continuous operation, with minimal human intervention at a fixed site.
- To produce drinking water that meets internationally recognised drinking water quality standards (DWI, UK) throughout the trial, with a specific focus on biological safety.
- To monitor the quality of water at different stages of treatment through the system.
- To optimise the system for future trials and international deployment.

2.1.2 NINJA Field trial location

The raw water was drawn from a heavily modified artificial water body at the University of the West of England (N 51° 29' 56", W 2° 32' 39"), shown in Figure 1. The PAqua WPU (detailed in TR 3.1) was deployed on the south east bank of the water body (Figure 3). This was housed in a Shed-in-a-Box® (ShelterLogic Group, USA), a heavy duty storage tent, to protect the unit and electrics from the elements. For this trial, NINJA was run from the mains electricity, via weatherproof extensions.



Figure 3: Picture of the NINJA drinking water treatment platform with labels to indicate the location of the PAqua 1000D-2 and the ancillary equipment. Installation on Frenchay Campus, UWE, Bristol (N51°29'56", W2°32'39").

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6 Conclusions

The data from this trial clearly demonstrates that the NINJA-DWTP can provide biologically safe drinking water from a heavily contaminated raw water source. The NINJA-DWTP produced DWI standard biologically safe drinking water throughout the entire trial, and has produced over 1.5 million litres in six months of continuous running. This has involved no intervention in the treatment system and very little maintenance, with the only consumable required being additional salt (< 75kg) for the ECAS production.

The pre-filtration step of the current arrangement ensures reduced turbidity of the input water for the NINJA-DWTP. This aids removal of some chemicals, such as ammonium and chloride; metals (aluminium, iron, manganese, lead); particulates; and bacterial loading. The addition of this polishing step for the input water ensures the continuous running of the system and extending the time required between cleaning/maintenance.

Customer feedback

Icaros Zero Carbon Village, Karystos, Greece

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LAUNCHE OF FIRST OPERATIONAL BIOTECHNOLOGY WATER SYSTEM FOR COMMUNITY'S NETWORK
ISO 9001 process & distribution of drinking water



Customer feedback

Icaros Zero Carbon Village, Karystos, Greece



Dear Nick

Please find below a small description of the case study in Karystos ,Greece which you can improve on.
The Foundation has the approval of the Air-Marshal for this.

Best Regards

Emmanuel

ICAROS ZERO CARBON VILLAGE
GREEK AIR FORCE KARYSTOS
EVIA ISLAND

Commissioned May 2018,
the technology produces drinking water to the highest standards using solar energy and serves the needs of the people for general purposes (drinking, washing, watering etc).The system is accessed remotely ,monitored 24/7 via a 4G mobile device.The source of the water is from the borehole grounds not fit for human consumption due to heavy metals and biological contaminants.Finally, we, as suppliers and the Ikaros community accomplished the accreditation of an ISO 9001 for this ecological water purification process.The President of Icaros Air-Marshal Geroulis is very happy with it's performance and has recommended it to the Greek Arm Forces.

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OSMOSA ICAROS Syn.P.E. in collaboration with Water for People and Peace and the British Company Portsmouth Aqua, Aviation, overcame the quality problems of drinking water with the installation in the area of AETOS in the Municipality of Karystos, EVIA Island, Greece, of a unique -innovative water treatment system - of purification and distribution to the water network that runs with renewable energy including photovoltaic power, continually with ideal characteristics without use of chlorine and consumables.

We are strongly recommending the above system to be adopted by the Greek Government Authorities for use to the other Municipalities.

Dr. G. Geroulis Lt.
General President
of ICAROS

Customer feedback



Τεχνοβλαστός Αριστοτελείου
Πανεπιστημίου Θεσσαλονίκης

Αριστοτέλειες Καταρτίσεις
Αξιολογήσεις Πιστοποιήσεις Α.Ε.

ΠΙΣΤΟΠΟΙΗΤΙΚΟ ΣΥΜΜΟΡΦΩΣΗΣ ΣΥΣΤΗΜΑΤΟΣ ΠΟΙΟΤΗΤΑΣ

Η ACTA πιστοποιεί ότι το Σύστημα Ποιότητας της:

Εταιρίας: Οικοδομικός Συνεταιρισμός
Μονίμων Στελεχών Αεροπορίας
"Ο Ίκαρος"

Έδρα: Δημητρίου Σούτσου 40 Αθήνα
Υπόκ & Εγκατ: Αετός Καρύστου

συμμορφώνεται με τις απαιτήσεις του προτύπου:

ISO 9001:2015

Αναφορικά με τη δραστηριότητα:

Άντληση, Επεξεργασία και Διανομή Νερού.

Αριθμός Πιστοποιητικού: 9-15/0059/19/A

Το πιστοποιητικό ισχύει έως: 26/09/2022

Ημερομηνία έκδοσης: 26/09/2019



Ευστάθιος Ι. Ανδρονικίδης
Διευθύνων Σύμβουλος
ACTA Α.Ε.

Το παρόν πιστοποιητικό είναι ιδιοκτησία της ACTA και συνοδεύεται από την σύμβαση Αρ.: 059/09/19 στην οποία καθορίζονται οι όροι τήρησης του. Η ισχύς του είναι τριετής με την προϋπόθεση επιτυχούς διενέργειας των ετήσιων επιτηρήσεων.

Customer feedback

Leamna Hospital, Craiova, Romania



CONSILIUL JUDEȚEAN DOLJ
SPITALUL DE PNEUMOFIZIOTERAPIE LEAMNA

Operator de date cu caracter personal înregistrat la A.N.S.P.D.C.P., sub nr. **15823**

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Customer feedback

Leamna Hospital, Craiova, Romania



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Leamna lab tests results



nicoli@t-g.ro

To Simon Escott; Nicholas Scott; Gary Driscoll
Cc CALIN HUMA; GUGU; CICEALA

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Wed 07/10/2020 04:05

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Rezultate analiza microbiologica apa 05.10.2020.pdf
1 MB



Rezultate analize fizico-chimice apa 05.10.2020.pdf
2 MB

Good morning Simon!

Yesterday

We received the DSP lab tests for both physicochemica and bacteriological parameters for Leamna. We are now waiting to receive from England the additions to the tests for accepting the use of Paqualyte 200 biocide for drinking water for human use and we will obtain the marketing approval of the Paqua 1000-D2 unit. We are close and I am convinced that our PA & T-G team has successfully completed this project.

Best Regards

Ing.Nicoli Marin
General Manager
Tehno-Grup SRL România

Please, see below the translation of the comment the hospital's Epidemiologist, Mrs. Merișanu made:

"Good evening,

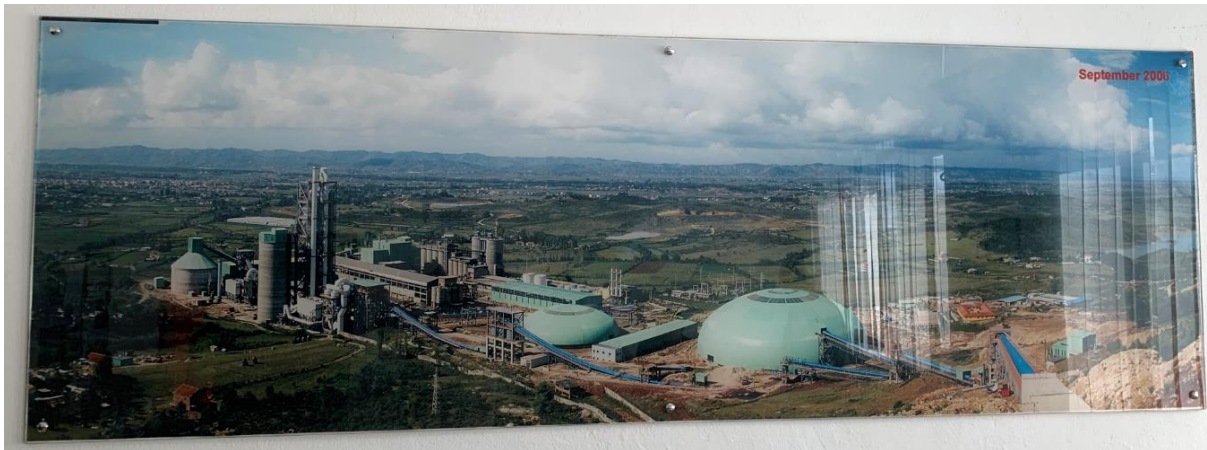
I am very pleased to attach the results that indicate the efficiency and effectiveness of the drinking water purification unit that you have installed at the PNF Leamna Hospital. Although the microbiological analysis of raw water highlights the presence of coliform bacteria and exceeding the parameters No. colonies at 37C and 22C, after passing through the water purification unit, regardless of the place of sampling, the water is brought to normal values (without any cfu).

Also, physicochemical examination indicates perfect operation of the purification unit, as the raw water with an ammonium value of 2.83 and hardness of 26.94, after passing through the purification unit is brought to normal parameters / water potability requirements (ammonium <0,5 and hardness around 7). Congratulations on these eloquent results!

Respectfully yours,
Merisanu Valentina"

Customer feedback

Cement works, Albania



Customer feedback

Cement works, Albania



I am writing to you to thank you for the very good job you have done with the water purification system.

In October 2019 we conducted a periodic water sample analyses, and the results indicated the presence of Escherichia Coli (2 units/100ml) and Total Coliforms (4 units/100ml) on water supply well No.2.

We prepared an urgent emergency action plan to resolve this problem (Part of this action plan was the installation of a water purification system). The complete water supply system was disinfected and we contracted a supplier to fill the main water tanks meanwhile.

In November 2019 we manage to install the water purification system (provided by you) to ensure a safe water supply for our employers.

We made a lot of tests to check the quality and bacterial presence on the water.

All test results proved that the water does not have any bacterial contamination any more, and it is in compliance with the quality parameters for consumption.

Our company has more than 350 employers and their feedback was very good related to water quality.

The system is running in good operation conditions (without any trouble) since November 2019.

Thanks to your good job, on-site training and advice (how to monitor, operate and maintain) it, the water purification unit is running in perfect conditions.

Our next challenge is to use this system for the production of the disinfectant (ANTI-COVID 19).

I would highly appreciate if you could send me a short procedure for this matter.

Thanks indeed, and take care

Sent from my iPhone