**PURIFLOH SIGNS MoU WITH OSMOFLO** **18 August 2023**

**ASX Announcement**
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PuriflOH Limited ("PuriflOH", "PO3" or "Company") is pleased to advise that it has executed a Memorandum of Understanding ("MoU") with Osmoflo Water Management Pty Ltd ("Osmoflo"), dated 15 August, 2023, to jointly explore the potential for the use of the PuriflOH Free Radical Generator ("FRG") in water treatment systems.

The duration of the MoU spans two years initially, with the possibility of extension through mutual accord. The essence of this partnership involves a joint-funded effort to assess the technical and financial viability of the FRG water treatment system. Furthermore, the parties intend to pursue the commercialization of any resulting products or systems stemming from this collaboration.

The key area of exploration with Osmoflo is to investigate and verify the potential for the FRG to destroy Perfluoroalkyl and Polyfluoroalkyl substances ("PFAS") on a commercial scale.

PFAS contamination is a significant and growing global problem, with most current available treatment solutions being expensive, or resulting in intractable residual solid wastes, or both. By contrast, the FRG is designed to be inherently inexpensive and chemical-free in its treatment of PFAS contaminated water and aims to eliminate the chemical without leaving any harmful residual by-products.

Initial results of PFAS treatment by PuriflOH's FRG showed significant promise for the destruction of PFAS (ASX: "*FRG SHOWS CAPABILITY OF PFAS REMOVAL*" – June 13, 2023). Results showed a 98% destruction rate.

Other development areas within the MoU include:

- Applications involving Total Organic Carbon ("TOC") removal where coagulation, conventional treatments or membrane filtration are not suitable;
- Usage in connection with a fixed bed reactor to optimise the removal of organics in feed water; and
- Other specialty applications such as landfill leachate treatment, waste water treatment and reverse osmosis brine treatment.
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Stages in the collaborative partnership include:

- Establishment of the optimum PFAS destructive conditions in a laboratory scale system;
- Pilot plant to demonstrate PFAS removal in a real-world setting and to provide data for commercialisation and development purposes; and
- Product design.

PuriflOH Chairman, Mr Carl Le Souef, said today:

"*Execution of this MoU with Osmoflo is a significant development for the Company as it proves the ongoing interest in the technology by a substantial global organisation. Validation of the specific objectives of the MoU would provide a clear pathway towards commercialisation.*

*It is difficult to assess the potential commercial opportunity that would exist for a company that can destroy PFAS on any meaningful level as there is no currently successful market proxies to provide that indication. However, if PuriflOH can deliver an economic solution to such a global problem then it is likely the scale of the addressable market will be significant.*"

Osmoflo Chief Technology Officer, Mr Neil Palmer, also said today:

*"Osmoflo has been working with the PuriflOH Free Radical Generator system and we have been impressed with the potential for treatment of waters containing dissolved "hard to treat" contaminants. We are looking forward to a productive period of co-operation with PuriflOH with an initial focus on PFAS destruction."*

**END**

Approved for release by the Board of PuriflOH Limited

**BACKGROUND**

In February 2022, PuriflOH provided Osmoflo with a laboratory scale prototype of the FRG technology to assist with bio-fouling and help explore other water opportunities using the FRG technology. Preliminary testing of the FRG technology by Osmoflo has demonstrated positive indicators that the FRG technology can be used to develop efficiencies in the water treatment process.

PuriflOH's engagement with Osmoflo has added a new dimension to the company's profile since 2022 and the company has therefore motivated several activities that can benefit from being compiled together to showcase the company's continued progress:

- Research & Development
    - In 2022, the companies worked together to establish a lab-scale water treatment system that can be used to test the effectiveness of the FRG technology on any kind of water – from drinking quality to landfill leachate wastewater. This system continues to be operated out of Osmoflo's R&D facility in South Australia.
    - More recently, the PuriflOH has created a lab-scale system in Victoria to repeat tests conducted by Osmoflo and to explore new water treatment avenues.

- System Design
    - As part of the ongoing system improvements, the company has worked with Somnio Global to upgrade the original power supply design to a modern version that offers cheaper manufacturability and improved control.
    - Currently, the company is creating a manufacturable design the supply chain of this power supply and incorporating design changes necessary for future prototype and commercial devices.

- Other opportunities
    - The company is exploring other opportunities to showcase the FRG and explore its commercial value. One example is the development of a solar panel powered and skid-based water treatment system that can be used for water treatment in remote and under-developed areas across the world. The company is actively seeking partners to trial this concept.

**ABOUT OSMOFLO**

Osmoflo is an Australian based, wholly owned subsidiary of the Japanese listed engineering firm, Hitachi Zosen Corporation. Osmoflo is a reputable and progressive water treatment company that provides innovative, tailored, turn-key water and wastewater solutions across the industrial, resources and municipal sectors globally. Having delivered over 450 projects since 1991, as well as operating and maintaining around 100 RO desalination plants on behalf of clients, Osmoflo has an enviable track record of providing successful, high technology water solutions.

**ABOUT PFAS**

Perfluoroalkyl and polyfluoroalkyl substances (PFAS), characterized by their widespread application and slow degradation, remain prevalent globally. These enduring chemicals have permeated the bloodstream of humans and animals worldwide, while also being detected at trace levels in various food items and the surrounding ecosystem. Their omnipresence extends to water bodies, air, soil, and aquatic life across the planet.

Scientific investigations have unveiled a concerning correlation between environmental PFAS exposure and adverse health outcomes in both human populations and animal species. The intricate web of PFAS compounds, numbering in the thousands, is integrated into an array of consumer, commercial, and industrial goods, posing a challenge to thoroughly fathom and assess potential risks to human health and ecological equilibrium. This complexity hinders the comprehensive evaluation of these compounds and their far-reaching consequences, underscoring the necessity for collaborative interdisciplinary research and regulatory efforts to comprehend, mitigate, and ultimately counteract the potential hazards associated with PFAS contamination (https://www.epa.gov/pfas/pfas-explained).

One of the first explorations of the partnership between PuriflOH and Osmoflo will be the technical and commercial viability of the PuriflOH system in PFAS removal. Preliminary testing by Osmoflo has resulted in a 98% removal of dissolved PFAS.

**FAS REMOVAL – COMMERCIAL SCOPE**

Activated Carbon and Ion exchange, while commonly used for PFAS removal, pose environmental hazards through toxic waste generation and disposal. The scope of the issue is expanding rapidly, demanding more robust control measures.

PurifOH introduces a transformative breakthrough with its FRG technology, which achieves Advanced Oxidation Processes ("AOP") without relying on chemical consumables. Traditional AOP involves ozone/UV treatment combined with high hydrogen peroxide levels, incurring substantial chemical and operational costs. In contrast, PO3's FRG technology harnesses ambient moisture and oxygen to generate highly oxidative hydroxyl radicals, a process driven by energy-efficient cold plasma generation.

This approach yields effective water treatment at a fraction of the expenses associated with alternatives like UV and ozone generators. PurifOH is confident in the FRG's capability to efficiently remove PFAS chemicals and believes its cost-effectiveness positions it as a distinctive solution in this market.

Collaborating with Osmoflo to concentrate PFAS chemicals via RO prior to FRG destruction enhances our strategy's efficiency and impact. Through this strategic partnership, PurifOH aims to set a new standard in PFAS remediation, revolutionizing water treatment practices while prioritizing environmental and economic sustainability.

**PFAS IN THE MEDIA**

PFAS is one of the major issues facing the world today and is often in the news in Australia and around the world:

- Around us – Significant PFAS contamination was revealed during the West Gate tunnel boring- https://www.theage.com.au/politics/victoria/ombudsman-scathing-of-epa-over-west-gate-tunnel-toxic-soil-dumping-20220530-p5apow.html
- In Australia – $132.7m class action settlement to contaminated land owners - https://www.theguardian.com/environment/2023/may/15/australian-government-reaches-1327m-class-action-settlement-with-landowners-over-pfas-contamination
- USA – 3M pays out $10.3b over PFAS - https://www.theguardian.com/environment/2023/jun/22/3m-settlement-municipal-water-systems-pfas-contamination
- Drinking water – 45% of American tap water has PFAS - https://www.usgs.gov/news/national-news-release/tap-water-study-detects-pfas-forever-chemicals-across-us
- Contaminated water supply in New Jersey - https://www.bbc.com/news/world-europe-jersey-66361242