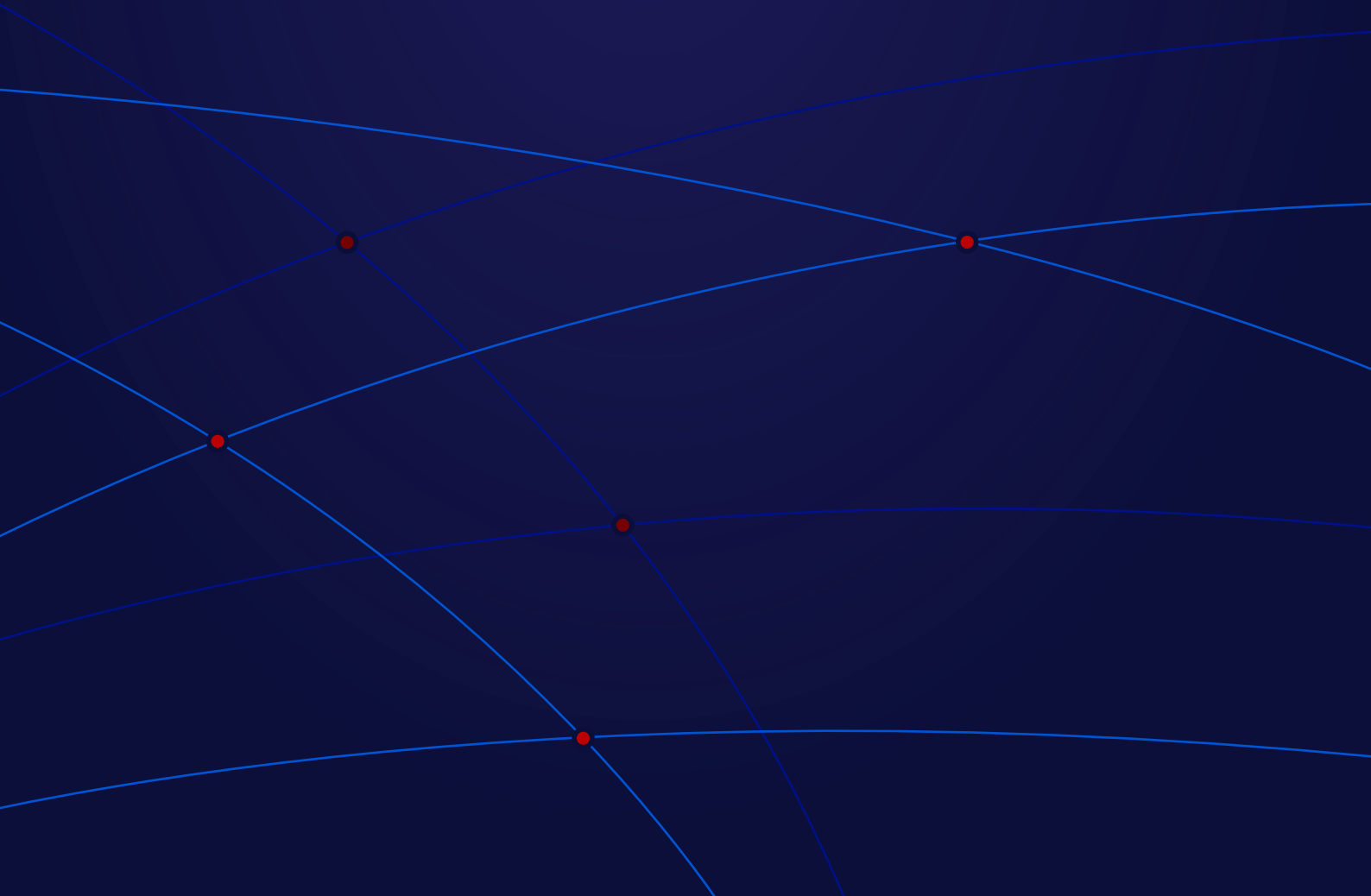




# **Petronor** **aquateam**

## **Water and Environmental Services**

Expert Solutions for the Iraq Oilfield



# Water and Environmental Services

## Tailor Made Solutions for the Iraq Oilfield

Aquateam of Norway and Petronor have partnered to bring world-class, independent water and environmental services directly to the Iraqi oilfield. Field sampling and environmental studies will be fully-supported by Aquateam's state-of-

the-art laboratories in Norway, and driven by local technicians, mobile field laboratories and a permanent local laboratory within the future Iraq Energy City near Basra.

### Field Sampling & Laboratory Analysis

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### Environmental Studies

Our environmental services include baseline studies and consultation, risk assessment, and impact studies of discharges.

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Environmental baseline studies including sampling and monitoring; soil, sediments, groundwater, local water sources and biota

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Identifying target groups for environmental baseline (local human society, animals, birds, biota, plants etc.)

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Preparation and assistance in monitoring and control

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Monitoring discharge and emissions

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Provision of discharge permit compliance monitoring programmes

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**Local operating experience combined with 20 years of world class water and environmental services, delivered directly to the Iraqi oilfield.**

### Risk Assessment and Impact Studies

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Sampling and field testing

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Ecotoxicological studies of discharges and production chemicals

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Passive biological sampling (fish or other biota) for environmental impact assessment, CHARM model of chemical usage

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Environmental risk assessment

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Mass balance modeling of chemical partitioning, behavior and impact

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# Water and Environmental Services

## Produced Water

Produced Water (PW) services include obtaining samples directly from the well stream, performing analysis and interpreting the results. Examples include:

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Treatability and trouble-shooting studies

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Technology performance studies

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Audits for produced water systems (hydrocarbon, solids, bacteria, and corrosion)

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Sampling and monitoring (solids, particle size, oil, microbiology, scaling, corrosion, pollutants, toxicity)

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Microbiological, chemical, and treatability mapping of back-produced fluids, pigging debris, sediments and biofilm.

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Assessment of best available treatment and disposal options to minimize environmental impact including:

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Documentation of efficacy of selected discharge options

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Cost/HSE benefit



## Produced Water Re-Injection

We also offer Produced Water Re-Injection (PWRI) services. These include:

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Investigation of produced water technology performance and feasibility requirements

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Assessment of the impact of co-mingling produced water with different injection water qualities (scale, corrosion, souring and reservoir plugging)

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Establishing water quality criteria for PWRI

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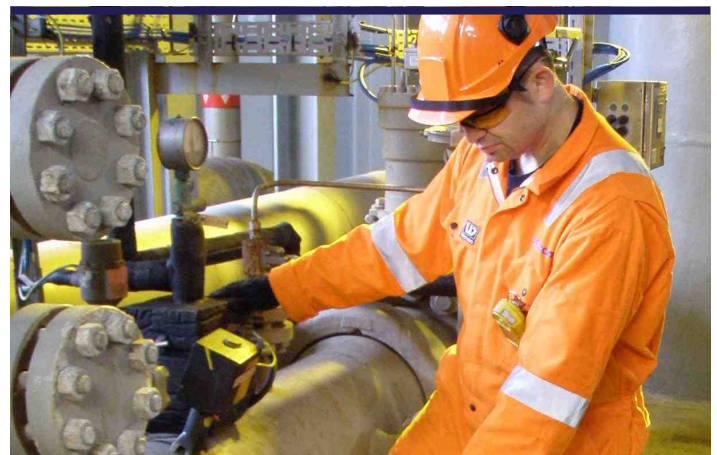
Implementation of onshore and offshore R&D studies for investigating scaling, corrosion and souring potential

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Documentation in pilot and full scale PWRI studies

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Specialized services based on local needs





# Petronor

# aquateam

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## About Aquateam & Petronor

Petronor, a company with operational experience in Iraq, delivers a wide-range of services to the oil and gas industry. Their Safe Fields™ technology brings mobile communications centers to the Iraqi oilfield, allowing access from a secure location.

Petronor has developed Iraq Energy City (IEC), a next-generation oilfield services supply base near Basrah, Iraq. The IEC provides secure working and living experience for oil companies operating in Iraq, including the future water analysis laboratories envisioned by the joint venture of Aquateam and Petronor.

Aquateam is an independent consulting company from Norway that specializes in environmental services. The company conducts research, development and consultancy projects world-wide.

Aquateam's R&D activities have addressed numerous environmental issues within the oil and gas industry. With a 20-year proven track record of extensive operational experience, Aquateam is an obvious choice for your water service needs in Iraq.