



Understanding the Different Types of Water That Require Treatment in Frac Ponds and Fracking

Water plays a critical role in hydraulic fracking within O&G. Large volumes of water stored in frac ponds are either sourced from natural reserves or recycled from previous operations. However, before this water can be used or reused, it has to meet strict quality specifications to ensure efficient fracking, prevent equipment damage, and comply with environmental regulations.

Types of Water in Fracking and Frac Ponds

Freshwater

Many operators source water from surface reservoirs, rivers, or municipal supplies. However, this water often contains bacteria, organic matter, and TSS (Total Suspended Solids) that can foul equipment and cause formation damage, such as H₂S formation from bacteria. Pre-treatment using filtration, oxidation, or biocide application ensures water quality is optimal before it enters the fracking process.

Produced Water

Once a well has been fracked, it returns produced water, which is a mixture of the original frac fluid and formation water. This water can often contain H₂S, dissolved iron, TSS, and oil from underground formations. If reused, this water must be treated using chemical precipitation, filtration, and separation technologies to remove contaminants that could interfere with well performance and pond health.

Flowback Water

Immediately after fracking, most of the water pumped into the well returns to the surface as flowback water. This water contains concentrations of oil, chemicals, and solids that need to be separated before reuse or disposal. Treatment methods, such as de-sanders, additional separation, help restore the water to a quality suitable for disposal or return for further treatment to reuse in additional fracking operations.

Why is Treatment Essential for Fracking?

The effectiveness of fracking depends on the quality of water used. If water contains excessive scaling tendencies, iron, oil, or H₂S, it can lead to:

- Scaling and blockages in wellbores and pumps
- Reduced efficiency of fracking chemicals
- Environmental compliance risks
- Increased operational costs and possible downtime

By partnering with a third-party lab that offers field experience in testing, chemical and technical service experts, and the ability to monitor water operations on-site, this allows operators a deeper understanding of their initial water chemistry, which allows them to select the most efficient chemical treatments, recycling technologies, and filtration technologies. Whether the goal is recycling frac water, disposing of produced water, or optimizing fresh water for fracking, a tailored treatment approach ensures cost savings, pond cleanout, downtime avoidance, regulatory compliance, and sustainable operations.

OLA's Early Detection Service (EDS) offers a tremendous advantage through real-time, full-time monitoring of 15 critical operational water parameters, including H₂S, pH, TSS, TPH (Total Petroleum Hydrocarbons) and more. This cutting-edge system provides both a defensive solution, by continuously tracking water quality and detecting potential issues before they escalate, as well as a proactive remedy through inline technology that reads the same parameters as water enters from the source. By enabling operators to make immediate, data-driven adjustments, EDS helps prevent costly failures, ensures regulatory compliance, and enhances overall water management efficiency.

For operators seeking the highest level of expertise in water testing, there is no substitute for the professionals at OLA who specialize in water chemistry and management both in the lab and the field. With the industry's only ANAB ISO-17025 accredited laboratory and a commitment to an unbiased, science-backed approach, our customers can rely on the most trusted authority to ensure their water quality meets every operational and regulatory standard.