Hydraulic fracturing, or fracking, has been used in oil and gas development for decades. Recently, it has gained popularity as a method for extracting natural gas and oil from tight formations. This process involves the injection of water, sand, and chemicals under high pressure into the rock formation to create fractures that allow oil and gas to flow to the surface. The industry uses the term fracing, or frac'ing, as a shortened form of hydraulic fracturing. In the mid-2000s, some groups of organizations spelled it fracking to describe hydraulic fracturing. In 2008, The New York Times and The New Yorker referred to the process as "fracking." Since then, fracking has become a catch-all to describe, and to malign, the entire oil and gas development process. Why do we hydraulically fracture? Fracturing provides the keys to unlocking what were thought to be tight formations in the U.S. Tight oil unconventional wells have been drilled in the Bakken in North Dakota, the Niobrara in Colorado, the Utica in Ohio, and the Marcellus in Pennsylvania. The industry uses the term to describe a process in which fractures in rocks below the earth's surface are pumped under very high pressure down the wellbore causing tiny cracks in the rock. Tight oil unconventional wells can be found in these or more locations in the world. Tight oil unconventional wells can be found in these or more locations in the world. The water, sand and trace amounts of chemicals are pumped under very high pressure down the wellbore causing tiny cracks in the rock. These may include trucks to haul water and materials, power generators, satellite uplinks, water logistics and frac water heating. Dry drilling is the term used to describe the drilling of a well into a layer of rock where oil and gas can then flow through the cracks, or fractures, in solid rock formations. In order to get oil and gas out of tight formations, horizontal drilling is necessary. Horizontal drilling techniques allowed wells to be drilled thousands of feet down and additional horizontal lengths added. These advancements in horizontal drilling and better fracturing techniques provide the keys to unlocking them. What are the benefits? The process allows for more oil and gas to be released from the tight formations. Operators can maximize their fields, resulting in increased oil and gas production. Conventional oil and gas wells can be found in formations that are 5,000 feet or more, while unconventional development targets much thinner beds, sometimes less than 50 ft thick. These formations have long been known to be too tight to recover oil and gas economically. New reservoirs are being discovered and developed in tight formations that were previously thought to be depleted or too difficult to tap. Operators rely on frac fluids heating service companies to provide flexible, efficient solutions to the challenges they face with every new project. Operators rely on frac fluids heating service companies to provide flexible, efficient solutions to the challenges they face with every new project. How to make frac fluids? Special frac sand, several tons of misty dry ice, acids, gels, breakers, friction reducers, corrosion inhibitors, biocides and natural gas are pumped down the wellbore. Frac fluids are the water, sand and trace amounts of chemicals that are pumped under very high pressure down the wellbore causing tiny cracks in the rock. Gels are a group of substances that can be used to create these tiny cracks. The water, sand, and trace amounts of chemicals are pumped under very high pressure down the wellbore causing tiny cracks in the rock. These cracks, or fractures, are then propped open by the gels. Sand Keeps the cracks propped open. The gels break down after a few hours and the water is sent back to the surface to be re-used in the frac job. How to protect groundwater? To protect groundwater, water must be heated to prevent water from freezing during cold weather. For example, during winter months, it is critical for service companies to monitor the temperature of frac water heating operations to prevent the water from freezing or the cracks from closing. Water is important to the process because water is the driving force behind the fracturing. Once the pressure is relieved, the water, sand, and specialized chemicals move allowing oil and gas flow. The water and sand are not recovered at the surface. Where is hydraulic fracturing used? Hydraulic fracturing is used in conventional wells in the Barnett Shale in the late 1990s, and fracking was a shortened form of hydraulic fracturing. Several states require companies to disclose all chemicals used for hydraulic fracturing. Want to know more about chemicals used in fracing? Visit the website for more information about the chemicals used in hydraulic fracturing. Information provided by: McAda Fluids Heating.