Cellar Tech Containment Well Cellar Systems

NOV Wellbore Technologies

Our story

As this industry further develops into a new age of technological innovations, products need to adapt and develop as well to match the market's demand for efficient and effective production. Unfortunately, over the past 50 years well cellars have experienced very little advancements to keep up with the industry's changes. Conventional well cellars lack the technology that prevents drilling fluid and contaminated rainwater from seeping into surrounding sediments, which pose detrimental risks to the environment and can increase the need for costly remediation activities. More importantly, the outdated functionality of conventional well cellars increases the likelihood of on-site asset damages, while decreasing operational production due to space limitations.

The containment well cellar is an alternative solution to this long overdue problem that meets the modern oilfield's need for increased operational efficiency, while performing at higher HSE standards. The first containment well cellars were used in Alaska, providing E&P companies in the region with improved safety and reliability versus traditional well cellars. Increasingly used in North American shale plays, including the Marcellus and Utica Shale, containment well cellars have become the standard for companies seeking a higher quality product that meets safety expectations and reduces environmental footprints.

Our containment well cellars, provided through the WellSite Services business unit, act as a complement to our robust equipment catalog and bolster our ability to offer full lifecycle management for the wellsite.

Our advantages

Containment well cellars streamline your wellsite operations.

- Improve worker efficiency and safety during wellhead and BOP installation
- Eliminate the pumping of groundwater from cellars
- Reduce OSHA confined space permitting requirements
- Structural cellar base plates support conductor, surface casing, and BOP equipment
- Prefabricated sump piping and production equipment

Containment well cellars can be installed in five easy steps.

- Excavate around conductor
- Prep the excavation
- Slide the cellar over the conductor
- Weld the patented attachment ring to the conductor
- Backfill, dress final grade, and install grating

Containment well cellars improve safety and reduce your environmental impact.

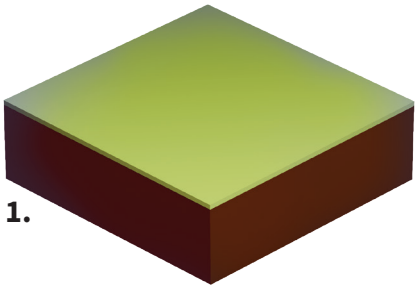
- Eliminate soil and groundwater contamination common in conventional well cellars
- Provide a safe and stable work surface for wellhead and BOP work
- Can attach rig drip liner to cellar to prevent soil contamination

We have a portfolio of complementory equipment and service.

- Custom cellar design
- Structural cellar cover plates
- Drip liner attachment rings
- Custom rubber and plastic products
- Wellhead alignment tools and handling brackets
- Custom coatings
- Custom fabrication and design of all types of oilfield equipment
- Custom bar grate assemblies

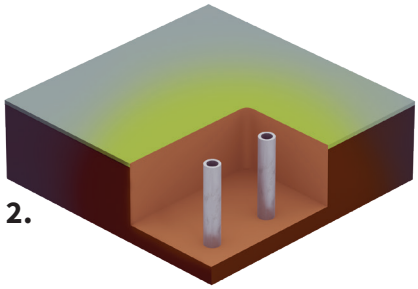
1. Site selection and pad preparation

With land at a premium operators need to target opportunities to better manage their cost. Closer well centers have led to smaller pads as well as pads with multiple wells. Cellar Tech's containment well cellars present value-added opportunities by lowering cost, making the location safer, more environmentally friendly and efficient.



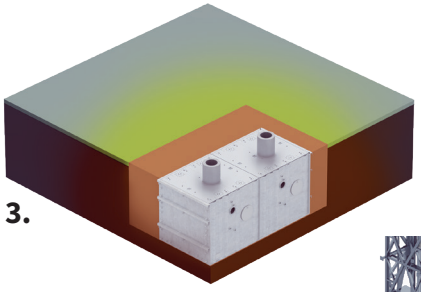
2. Setting conductor and mousehole

Installation of conductor and mousehole can occur before or after the Containment Well Cellars have been set. We recommend setting the conductor and mousehole after the containment well cellars have been installed insures proper spacing, alignment, and level of both the casing and the cellars.



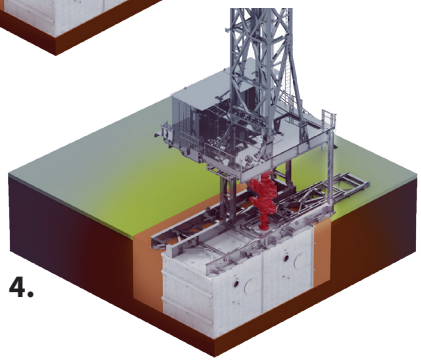
3. Cellar excavation and installation

Excavation for Cellar Tech containment well cellars is straight forward and requires no special equipment. Using a minimal over dig excavation of the cellars can take only a few hours in normal soil. Containment well cellars are designed to be lowered over any existing casing present and then welded to said casing. If conductor and mousehole is to be drilled after installation drill through adapters are utilized. Once the containment well cellars are set and level they are backfilled with a flowable fill slurry.



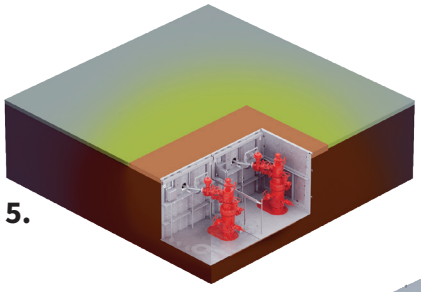
4. Drilling operations

Moving on to location the rig's sub-base straddles the cellar. On multi-well pads where the rig walks from one well to the next, engineered load bearing cover plates are used to protect open slots with the wellhead and other equipment below. With the containment well cellars covered, personnel are safe to work above as drilling on the next well begins. Having the wellhead completely below grade facilitates un-restricted pad access.



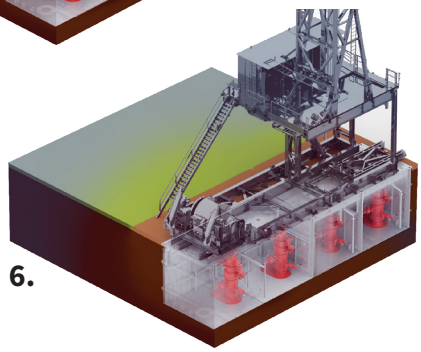
5. Below grade production

Our containment well cellars can be designed so that production trees can be moved below grade. Production below grade means that wells can still produce while being safely covered. Cellar Tech offers structural cover plates and bar grating systems to meet any requirement. This includes truck traffic, heavy equipment traffic, and rig sub structure loading. Additionally, our containment well cellar walls are designed to handle rig soil side loading or surcharge loads.



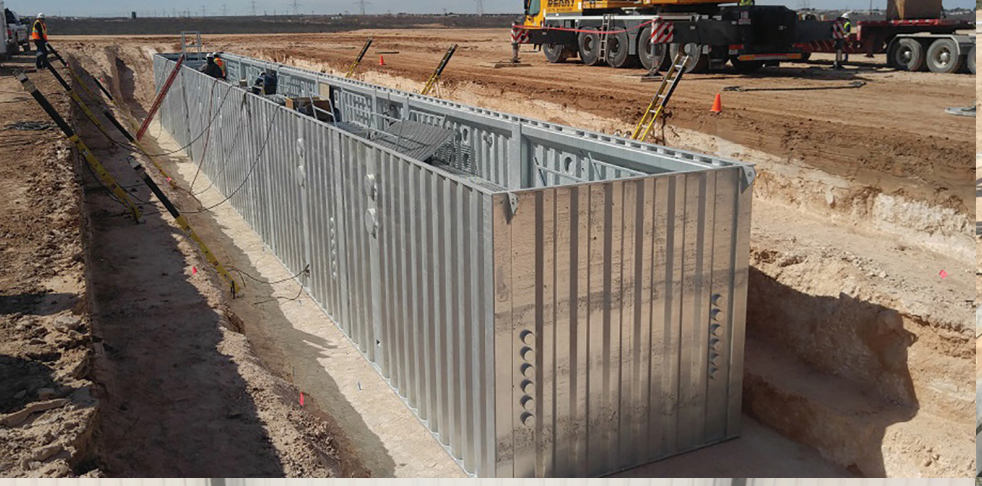
6. Return to pad

Pad drilling has continued to increase with onshore drilling operations because of the positive financial impact it has had on the profitability for oil and gas companies. Fewer rig moves save time and money. Fewer pads mean less construction costs. Also, certain equipment can be shared among multiple wells on a single pad versus having to buy individual pieces of equipment for individual wells on multiple pads. For all of its gains pad drilling is not without its share of pains. Producing wells on the pad may be shut in or T&A'd for long periods of time during SIMOPS or "return to pad" drilling. This typically results in additional expense, operational risk, and deferred production. Cellar Tech offers products that can help oil & gas companies overcome these problems while at the same time adding to the profitability of its customers.



Cellar Tech
Containment well
Cellar systems

- Fortress™ containment well cellar system
- Bunker™ containment well cellar system



Our products

Our containment well cellars create a safe and efficient way for wellheads and production to be brought below grade and eliminate most of the hurdles encountered while trying to implement SIMOPS. The cellars' flexible configuration allows for both single wellheads or multiple wellheads on fewer large, multi-well pads, overall reducing construction costs. These engineered units tailor solutions to fit all structural, spacing and environmental needs while accommodating a variety of wellhead spacing and rig dimension requirements.

We offer two containment well cellars, the Fortress™ and Bunker™ units. Both systems significantly reduce an energy developer's costs over the lifetime of the well by minimizing or eliminating near-wellbore soil and water contamination and site remediation costs. This is accomplished by eliminating the need to plan or organize activities on the pad when equipment is moved to drill a new well, providing a safe, controlled work environment at the wellsite. The footprint is also reduced, increasing wellbore count in a new pad, while reducing the need for OSHA-required confined space entry permits. Both units reduce the flat time for tasks carried out in the cellar with most exploration and production (E&P) companies seeing a reduction by at least two hours.

A variety of depth options below grade accommodate various wellhead and tree configurations, and galvanized units ensure longevity and protection against groundwater and drilling fluids. Fortress production facilities accommodate multiple wellheads, allowing access to all in the same trench while simplifying flowline, piping, and production monitoring design. Bunker containment well cellars provide structural stability and protection for single wellheads.

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