

August 6, 2020

Part 2: Proper Plugging in North Dakota

The unemployment rate in core oil and gas producing counties went from 2.1% in March 2020 to 9.4% in April 2020 according to the North Dakota Labor Market Information Center. As of early July more than 10,000 unemployment claims had been filed in the Oil and Gas sector. Those hit hardest are the service companies. Roustabout crews, truck drivers, wireline and rig crews, tool hands, cementers, rental companies, skilled pipeline welders, and other highly trained personnel have been mowing lawns at the office, pulling weeds, and relying on Payroll Protection Plan (PPP) funding that is now running out. Without work, the most skilled of these crews will seek employment elsewhere. How can ND keep jobs and skilled workforce in the state, preserve current production capacity, and incentivize future investment while continuing to regulate the oil and gas industry and hold them accountable through this troubling time?

Losing skilled workforce and companies instead of finding opportunities for them would make our oil and gas challenges, including abandoned wells, worse in the future. When prices improve, operators would have no experienced skilled staff, contractors, or service companies to return North Dakota's wells back to production or plug abandoned wells. To keep these folks in the state the North Dakota Oil and Gas Division is working to confiscate and bid out the plugging of abandoned wells in North Dakota.

Plugging is the process that takes place to safely close a well permanently. Each well is unique in its design and each location has unique geology. This means that the technique used in Bottineau County to plug a well may be very different from a technique used in Dunn County; or, the complexity of the well may vary the length of time it takes to safely plug the well. Plugging operations on average take 3-5 days of work for a crew of 15-20

people. With 200-400 older uneconomical wells to be plugged, the state expects the plugging work needed will keep close to 600 skilled workers employed and busy over the next 6 months while oil prices slowly recover.

Properly plugging a well in North Dakota requires that a plugging procedure be submitted and approved by the North Dakota Oil and Gas Division. The Division does a review of each well for details such as: depth of the wellbore, casing string information, production zones, depths of perforations, cement bond logs, depths of potential formations to be plugged or requiring isolation, and any other known wellbore issues specific to the individual well. These procedures not only isolate oil and gas zones, but more importantly, protect our freshwater aquifers and resources. Once procedures are approved by the Oil and Gas Division, plugging can commence. This involves placing combinations of cement plugs and mechanical plugs at strategic depths in the well. Oil and Gas Division field inspectors will witness the placement of plugs and cement in the well. Once the well has been plugged to the satisfaction of the Division, the surface casing is cut off three to four feet below the ground and a steel plate is welded on top, ending the life of the well. Then reclamation to return the site to a useful state, in most cases, its original use begins.

The plugging process at the end of a well's life is just as complicated as initially drilling the well due to crews dealing with older subsurface features and equipment. Once a well has been plugged, while technically feasible, the likelihood of it being brought back to production is extremely low – and even more so after site reclamation has completed.

North Dakota has 11,224 plugged wells which needed to be plugged due to age, economics, maintenance, environmental and safety risks, production of the well, and/or many other factors. Regardless of the reason, or who is doing the work, properly plugging

a well ensures the safety of our citizens and the environment both above and below the ground.

Next week: [Part 3 – Reclaiming Abandoned Wells](#)

Previous week: [Part 1 – North Dakota’s Abandoned Wells](#) & [Podcast Special Episode: Abandoned Wells in North Dakota recorded with Dave Thompson of Prairie Public](#)

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