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DEP Reaches Agreement with CNX to Address 2019 Well Control Incident at Shaw Well

Pittsburgh, PA – The Pennsylvania Department of Environmental Protection (DEP) has concluded its investigation into the January 2019 Shaw 1GHSU (Shaw 1G) Utica gas well control and communication incident and executed a [consent order and agreement](#) (COA) with CNX Gas Company LLC (CNX) addressing violations and well construction. CNX has agreed to a \$175,000 civil penalty.

“Through robust internal coordination, DEP’s investigation brought field inspectors together with technical experts to determine the cause of the incident and evolve best practices based on what we’ve learned to push the industry to be more protective of the environment,” said DEP Secretary Patrick McDonnell. “As technology changes, DEP works within our regulatory framework to update regulations, but also issues technical guidance and engages in workgroups with various industries to constantly improve and uphold our mission.”

On January 26, 2019, CNX experienced an unexpected loss of pressure during hydraulic fracturing operations on its Shaw 1G Utica well, located in Washington Township, Westmoreland County. This loss of pressure allowed gas to be emitted uncontrollably into shallower geologic formations, resulting in subsurface communication with nine nearby conventional gas wells. CNX temporarily flared the nine conventional gas wells to relieve pressure. On February 4, 2019, CNX regained control of the Shaw 1G Utica well and stopped the vertical flow of gas by pumping heavy mud into

the wellbore, also referred to as “killing” the well. The nine conventional wells then returned to normal operating pressures.

After CNX provided notice of the incident, DEP’s emergency response and oil and gas staff responded immediately and maintained a 24/7 presence throughout the majority of the incident until the well was brought under control. DEP’s air quality and safe drinking water programs were also involved to monitor potential impacts. No spills or releases of fluids to the surface were observed or reported as a result of the incident.

Since then, CNX and DEP conducted separate investigations into the incident. CNX was using production casing with a higher tensile strength than is commonly used. CNX concluded in its submitted root cause analysis that hydrogen stress cracking compromised CNX’s casing integrity and most likely caused the incident. DEP’s contracted technical expert concurred with this conclusion that the high tensile casing was more susceptible to hydrogen stress cracking and corrosion. CNX has since reverted to using the lower tensile strength production casing that is less susceptible to hydrogen stress cracking in all of its new Utica and Marcellus gas wells. CNX also retrofitted all other wells that incorporated the higher tensile strength casing, including three drilled but uncompleted Utica wells and a previously drilled and hydraulically fractured Utica well.

The Shaw 1G Utica well is currently partially plugged back to a depth of approximately 2,000 feet, which allows CNX to use the well to monitor flows and pressures at the depth of nearby conventional wells. The operator intends to stimulate other wells on the Shaw pad. During stimulation of the other wells on the Shaw pad, the COA requires CNX to maintain control of the Shaw 1G Utica well at all times, report flow increases greater than 5,000 cubic feet per day, and submit a corrective action plan to DEP in the event of flow increases. CNX is also required to monitor pressures at the nine conventional gas wells affected by the original communication incident at least once per day during stimulation of the other wells on the Shaw pad and report any pressure changes to DEP. After stimulation of the other wells on the Shaw pad, CNX is required to conduct quarterly inspections of the Shaw 1G Utica well for at least five years, or until CNX and DEP agree that the plugging of the Shaw 1G Utica well can be completed.

DEP found CNX responsible for failing to use casing with sufficient strength or other safety measures to prevent blowouts, failing to maintain well integrity, and venting gas into the atmosphere. At DEP’s request, CNX conducted outreach to the local governments in the vicinity of the Shaw pad. DEP has shared the information gleaned from this incident with other operators, encouraged CNX to present its findings to the industry, and is working on technical guidance on this topic. The \$175,000 civil penalty will go into the commonwealth’s Oil and Gas Fund, which is called the Well Plugging Fund.

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