



READINESS WHITEPAPER

Date: May 11, 2020

Overview & Purpose

The Colorado Oil and Gas Conservation Commission (COGCC) and the existing regulatory regime in Colorado is prepared for and continues to protect public health, safety, welfare, and the environment through the economic downturn in the oil and gas industry as well as the workplace changes in response to COVID-19. Colorado Revised Statute¹ (C.R.S) directs the Colorado Oil and Gas Conservation Commission (COGCC) to:

regulate oil and gas operations in a reasonable manner to protect and minimize adverse impacts to public health, safety, and welfare, the environment, and wildlife resources and shall protect against adverse environmental impacts on any air, water, soil, or biological resource resulting from oil and gas operations.

In furtherance of its statutory mandate, the Commission has adopted rules governing the ownership, location, permitting, construction, operation, reporting, and abandonment of oil and gas locations in Colorado. The COGCC employs teams of engineers, scientists, technicians, and administrative personnel experienced with oil and gas operations to implement and enforce the Commission's rules.

¹ § 34-60-106(2.5)(a), C.R.S.

The COGCC has the authority as a last resort to require oil and gas operators to cease operations if that action is deemed necessary to protect public health, safety, and welfare, the environment, and wildlife resources in the event the owner/operator refuses to comply with Commission rules.

As is discussed in greater detail below, the COGCC is organized such that the pandemic and industry downturn has not to this point and is not expected in the future to represent a significant impediment to safe operations. This is due to three critical facts. First, key inspection personnel are deployed across the state and are equipped to access information from home offices and mobile devices. Second, operational information is uploaded and maintained in digital format which provides inspection staff with ready, remote access. And in addition to its field inspection experts, the COGCC is composed of teams of engineers, geologists, environmental and reclamation specialists, and enforcement professionals who regulate the industry. Third, COGCC's regulatory structure ensures that these professionals are able to continue their critical regulatory functions irrespective of what economic, social or health emergencies may exist. Colorado's regulatory structure evolved in response to previous economic downturns and includes important well construction and monitoring requirements for drilled wells that are not producing oil or gas.

The purpose of this white paper is to review and communicate the readiness of the COGCC to accomplish its statutory duties in the unprecedented environment of the COVID-19 pandemic and record drop in commodity oil prices.

Context for Current Extraordinary Circumstances

The current economic environment, exacerbated by the impact of workplace isolation in response to the COVID-19 pandemic, is unprecedented. The financial impact to operators may be significant. The industry has already responded to the downturn by laying down rigs, reducing associated staffing, and delaying the completion of already drilled wells. The number

of rigs operating in Colorado has decreased from 22 at the end of 2019 to just 4 as of May 4, 2020. While this might be the most precipitous drop in commodity price experienced, it's not the first time the industry has had to respond to dramatic economic downturns. As an example, the downturn in 2014-16 was significant enough to warrant curtailing operations and shutting in wells. Thus, wells are designed and constructed to be reliably, quickly and safely shut in and the well construction and design prevents release of product or adverse impacts to public health, safety, and welfare, the environment, and wildlife resources when a well is shut in.

Current Active Wells

The Colorado Oil & Gas Information System (COGIS), developed and maintained by the COGCC, contains the necessary information to reliably locate all active oil and gas wells in Colorado. Ownership and associated contact information is also maintained so that owner/operators can be quickly contacted. Data is readily available in both tabular and GIS format at the COGCC website (www.colorado.gov/cogcc), providing any interested party with access to the information. Table 1 shows a quick reference summary of the number of active wells in Colorado by month for the first calendar quarters of 2019 and 2020.

Table 1 - Well Status 2019/2020

Month	Active Wells		Shut-in Wells		Temporarily Abandoned Wells	
	2019	2020	2019	2020	2019	2020
Jan	53,385	52,068	10,116	9,306	1,539	1,734
Feb	53,278	52,022	10,033	9,225	1,439	1,982
Mar	53,294	51,953	9,628	9,068	1,486	2,049

Note: A Shut-in Well is capable of production by opening valves, activating existing equipment or supplying a power source. A Temporarily Abandoned Well has all downhole completed intervals isolated with a plug set above the highest perforation such that the well cannot produce without removing a plug or is incapable of production due to the removal of equipment required to transfer product from the well.

Engineering Standards Ensure Safety When Wells are Shut In, Temporarily Abandoned, Plugged and Abandoned or Drilled But Not Completed

In the current environment, operators may slow down or suspend operations; however, an operator shutting in, temporarily abandoning, drilling but not completing a well, or suspending drilling operations does not create increased risk to public safety, welfare, the environment, or wildlife. Wells are shut in, typically, to allow the operator to repair or replace equipment or because a low commodity price makes production unprofitable. Wells are shut in routinely (irrespective of Covid-19 or current commodity prices) and the shut in process is not subject to COGCC oversight because by its very nature it is safe. Once "shut in", the well is secure and the well design prevents release of the product. COGCC rules require operators to construct oil and gas wells such that the wells can be reliably "shut in" with valves that stop the flow of product at the well. Once shut in, the product is isolated inside the casing within the wellbore and underground. Although production equipment is larger in scale, it is very much like the way a homeowner turns off the water to their garden hose. Valves on the wellhead stop the flow of oil and gas that would otherwise be directed to sales pipelines or production tanks. In addition, there is no incentive for operators to vent a shut-in well as doing so depletes the reservoir pressure. Without adequate reservoir pressure, the product cannot get to the surface and the operator is prevented from being able to sell the product once commodity prices recover.

Alternatively, an operator may "temporarily abandon" a well when slowing or suspending operations. The operator must obtain COGCC approval on a Sundry Notice and temporarily abandons the well by removing production equipment, disconnecting production equipment, or setting a plug in the well. This process is also safe, and therefore, COGCC rules do not require staff to observe the operator's activities. For temporary abandonment, setting

plugs isolate the oil or gas producing zones and prevent flow of product from the completed formation in the well without plugging the well. These steps often precede plugging the well if the work is not performed all at once. Operators must seek approval from COGCC annually to maintain a well in a temporarily abandoned condition. A well is considered “plugged and abandoned” when an operator plugs the well to surface, removes all production equipment, abandons flowlines, remediates environmental impacts, and reclaims the site. Again, a well that an operator has “temporarily abandoned” is safe and designed to prevent release of product and a plugged and abandoned well is also safe and prevents release of product.

An operator may also have wells that have been drilled, but are uncompleted (i.e., Drilled UnCompleted or DUCs). This means that the operator has drilled the well and cemented the steel pipe (i.e., the casing) into the wellbore, but the producing formation will not be completed (i. e., perforated and hydraulically fractured, which is what allows product to flow into the pipe. Similarly, suspended drilling operations (or DUCs) do not pose a threat to the public or the environment as cemented casing prevents the product from flowing into the well. Leaving the well in a DUC or suspended drilling condition presents no safety issues and wells can remain in either condition provided the operator performs a mechanical integrity test within two years of setting the casing.

Every month operators are required to file a Form 7 to report the status of all their wells that are Producing, Shut-In, Temporarily Abandoned, Waiting on Completion (a DUC well), Drilling (includes actively drilling and suspended drilling), or Injecting. Wells are constructed such that the integrity of the well can be easily determined both visually and with the use of pressure testing equipment. Wells, flowlines, and production equipment are designed for all operational scenarios, including all of the referenced shut-in conditions for months or years if needed. Operators must continue to monitor their sites and comply with COGCC rules and regulations even when their wells are shut-in or temporarily abandoned. Wells must pass a

“mechanical integrity test,” a pressure test that ascertains that the casing does not have leaks within two years of being shut in or within 30 days of being temporarily abandoned. When off-location flowlines or crude oil transfer lines are shut-in or out of service for more than 90 days, they must pass a pressure test before returning to service.

COGCC Engineers' capacity to review well casing and cement design for well permits, well construction details on drilling completion reports, and plugging details on well abandonment reports is undiminished by the current COVID-19 or economic conditions. Engineers and technicians continue to conduct field inspections and process flowline reports for installation, testing, and abandonment.

Field Inspection

Field Inspectors, Integrity Engineers and Technicians, and Environmental Protection Specialists are highly trained with significant hands-on industry experience. Inspection and integrity personnel, relied upon to verify operational integrity and compliance with operational rules, are all adequately staffed. In addition, with drilling, completion, and other operations slowing down, inspectors and environmental protection specialists will focus their inspection efforts on production operations.

Table 2 provides a quick summary of the inspection activity for this calendar year to demonstrate COGCC's ongoing and unchanged ability to continue to monitor operations and the downturn in industry activity.

Table 2 - Inspection Activity 2019/2020

Month	Well/Location Inspections		Notices of Spud/Frac		Notices of Plugging Ops	
	2019	2020	2019	2020	2019	2020
Jan	3822/1815	4655/2197	171/119	82/126	274	292
Feb	3347/1652	4203/1885	168/144	87/108	223	280
Mar	3349/1902	4685/2042	159/169	107/108	261	333
Apr	2894/1770	4193/2357	160/186	59/51	326	152

Industry Outlook

As of the end of 2019, there were 52,153 active wells among 421 operators. Forty operators (10% of the active operators) controlled approximately 47,000 wells (90% of the active wells). COGCC’s monitoring efforts remain adequate and in place during Covid-19 and the commodity price downturn. Some have asked if the COGCC will attempt to control price or production levels in an attempt to stabilize the industry similar to other states that have indicated the intent to do so. COGCC does not have the statutory authority to control either price or production. However, as mentioned above, COGCC does have the authority to order an operator to shut in a well if the well cannot be operated in a manner that is protective of public health, safety, and welfare, the environment and wildlife resources.

Insolvent Operators

There have been a number of inquiries as to the safety of wells should an operator be suddenly unable to continue operations due to insolvency. While the specific response will vary depending on the particular operator involved, the basic response remains the same in that protection of public health, safety, welfare, and the environment remains paramount. If the operator does not shut in their wells prior to abandoning their operations, then COGCC staff

will do so because shutting in the well is most protective. The COGCC will then develop a plan to address the wells, which may include working with a purchasing operator, working with a bankruptcy trustee, or claiming the financial assurance to plug the well and reclaim the site.

COGCC does not have access to operators' confidential financial information or the fiduciary expertise required to determine whether or not an operator is solvent or insolvent. COGCC monitors operators' compliance with the rules, and track news outlets and bankruptcy filings as part of overseeing the industry. For example, failure to report production, file required notices, return informational inquiries or follow up on corrective actions noted during inspections can provide the COGCC with a sense of an operator's changing capabilities. Operators with a high percentage of long-term shut-in or temporarily abandoned wells also receive increased monitoring through the COGCC's periodic audit of inactive well financial assurance requirements. As a result of these inactive well reviews the COGCC has secured additional bonding in excess of \$90,000,000 over the last 5 years. These are some examples of how COGCC monitors operator's on-going compliance as well as indicators that suggest insolvency or other financial challenges.

There have been a number of questions regarding the adequacy of the current levels of financial assurance should a large number of wells be abandoned. COGCC's December 1, 2018 [Executive Order D 2018-12 Financial Assurance Technical Working Group Final Report](#) describes challenges with existing financial assurance requirements and potential solutions. The Financial Assurance Rulemaking will be taken up once the Senate Bill 19-181 Mission Change rulemakings are complete. This timeline emphasizes the importance of Mission Change rulemaking and recognizes the priority the Legislature required of the COGCC for these four Mission Change rulemakings. Additionally, staff has analyzed the current financial assurance protocol and have not identified any measures that could be implemented immediately that would create better financial assurance interim environment.

Evaluation of Compliance Deadlines and Other Measures in Response to COVID-19

Operators, Colorado legislators, and the Governor's office have asked COGCC to review what, if any, compliance measures could be eased during the time when businesses are responding to COVID-19 and have reduced access to office based resources. In response, COGCC revised the Corrective Action matrix that sets the response time operators are allowed to address rule violations noted during an inspection. The matrix was revised by adding a COVID-19 response time column and distributed to employees on April 15. The matrix is also available on the COGCC website (www.colorado.gov/cogcc).

The revised matrix did not extend the deadlines associated with any matters that directly affect public health, safety, and welfare, the environment or wildlife resources, but did extend some reporting and administrative deadlines. In addition, three new Notices to Operators (NTOs) were published to the COGCC website on May 1 in response to the Governor's "Stay at Home" and "Safer at Home" orders and other changed circumstances in response to COVID-19. The NTOs address the acceptability of electronic service and signatures, extending the approval period for notices of intent to abandon wells, and delayed sampling, monitoring or reporting associated with ongoing soil or groundwater remediation projects when there is not a public health, safety, welfare, or environmental threat.

Conclusion

Regardless of the economic conditions and in the face of a workplace pandemic, the COGCC is poised to continue its responsible regulation of the oil and gas industry in Colorado in a manner that protects public health, safety, and welfare, the environment and wildlife resources. The COGCC staff's technical expertise, experience, and regional coverage throughout the operating basins in the state remain a core strength and an example of good governance in the face of challenging situations.