

Pipeline Safety Reg Bows To API RP-80

By Gregory D. Russell

COLUMBUS, OH.—On March 15, 2006, the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) issued a final rule defining onshore gas gathering for purposes of enforcing federal pipeline safety regulations (49 CFR Part 192).

Intended to establish a bright-line test for distinguishing between production and gathering facilities, PHMSA adopted the industry standard definitions for a production operation and onshore gathering line set in the American Petroleum Institute's Recommended Practice 80. While ending a decades-long battle on how to appropriately characterize these facilities, discussions with regulators and operators suggest there are still a few issues that need clarifying.

Fundamentally, RP-80 differentiates between jurisdictional and nonjurisdictional facilities based on the function they perform. It recognizes, for example, that production operations often extend well downstream of the wellhead and frequently include intermediate processes required to prepare gas for transportation.

This definitional style is necessary, RP-80 states, to encompass the widely varying facility configurations that exist nationally. RP-80 reads, "In accordance with general industry practice, the definition of gathering line is based on the function performed by that type of pipeline. This style of definition is necessary to accommodate the wide variety of gas gathering pipeline configurations throughout the country."

The DOT's rule, therefore, expressly contemplates that production operations and gathering lines continue to fulfill

their respective functions until defined and recognized endpoints are reached, regardless of any intermediate processes and/or deliveries that may take place.

Notably, RP-80 rejects a number of often-cited parameters as controlling the determination. For example, it considered and rejected a facility's physical parameters as determinative. "Such factors are not sufficiently correlative to actual pipeline function to be useful," RP-80 states.

RP-80 also rejects as inadequate, determinations based on gas quality, pressure or throughput, observing that these factors depend more on reservoir characteristics than surface operations. Additionally, RP-80 rejects ownership of the commodity or equipment as determinative. It states, "Custody transfer—whether defined in terms of ownership or physical custody—was another factor judged unsuitable for representing pipeline function. This factor has become inherently unstable and unreliable for such purposes because of the rapidly evolving nature of transactions in the (industry) and the increasingly frequent changes of ownership of the facilities themselves."

Assertions that a line is regulated gathering based solely, or even primarily, on these characteristics should, therefore, be considered suspect.

RP-80 Definitions

RP-80, in general, defines an onshore gas gathering line as the pipeline used to transport gas from a production operation to one of a series of endpoints marking, typically, the beginning of transmission. Specifically:

- Production operation means piping and equipment used to produce and prepare natural gas and/or gas liquids for transportation or delivery, and includes

the extraction and recovery, lifting, stabilization, treatment, separation, production, processing, storage and measurement of hydrocarbon gas and/or liquids, as well as the associated production compression, gas lift, gas injection, or fuel gas supply.

- Gathering line means any pipeline or part of a connected series of pipelines used to transport gas from the furthestmost downstream point in a production operation to the furthestmost downstream series of endpoints, which physically may have intermediate deliveries (to other production operations, pipeline facilities, farm taps, or residential/commercial/industrial end-users) that are not necessarily part of the gathering line.

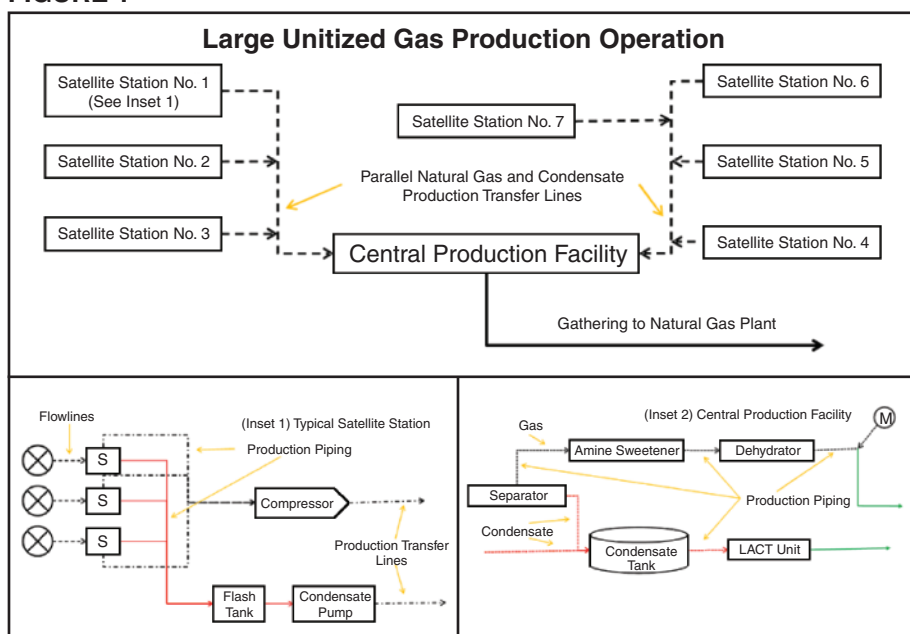
Those endpoints include the furthestmost downstream natural gas processing facility, gas treatment facility, or point where gas produced in the same or separate fields is commingled. RP-80 introduced the concept of "furthestmost downstream" in recognition of the industry's view that function controlled the determination.

Thus, gathering starts only after the production function ends, and terminates only after the gathering function ends—entirely. Commingling, compression, treatment and processing are all potential endpoints. However, RP-80 makes it clear that the gathering function has not ended "until all potential endpoints have occurred." For this reason, the definition provides for gathering to end "at the furthestmost downstream of the defined potential gathering endpoints."

Importantly, PHMSA also incorporated RP-80's supplemental definitions, decision trees and representative applications, making clear that "operators must use API RP-80 in its entirety to determine onshore



FIGURE 1



gathering lines, not just Section 2.2 as the proposed definition of onshore gathering line implied.”

To address the concern that some operators might try to manipulate a facility’s downstream endpoint to avoid or minimize federal regulation, PHMSA included some additional limitations in its final rule. Regarding production operations, for example, it states, “The beginning of gathering, under RP-80 Section 2.2(a)(1), may not extend beyond the furthest downstream point in a production operation as defined in Section 2.3 of API RP-80.”

This is no different in concept from the provisions of RP-80 themselves. But PHMSA continues, “This furthest downstream point does not include equipment that can be used in either production or transportation, such as separators or dehydrators, unless that equipment is involved in the processes of ‘production and preparation for transportation or delivery of hydrocarbon gas’ within the meaning of production operation.”

That is, the furthest downstream endpoint of a production operation can consist of dual-use equipment when that equipment falls within the RP-80 definition of production operation, i.e., where it functionally is part of production and not gathering.

Representative Applications

RP-80 contains a number of examples of production operations and gas gathering systems intended to provide concrete applications of its definitional concepts.

They may occur separately or in various combinations, and “are not intended to describe every possible onshore gas gathering system or production operation configuration. They simply represent some typical examples for facilities . . . in which the gas-gathering and production-operation definitions are applied to those facilities.”

Two general principles found in RP-80 are shown in Figure 1.

RP-80 states that this example comes from an actual 15,000-acre, 160-well-plus unitized production operation. Each satellite station has gas from 15-20 wells brought to it through production flowlines, where initial separation occurs. Compressors then reduce the back pressure on the wells to send the gas to a central

production handling facility through production transfer lines for additional separation and treatment.

A few things to note:

- The mere fact that separation and compression may occur at a common location (e.g., the satellite stations) does not automatically mean that the location serves as the boundary between a non-jurisdictional production operation and a potentially jurisdictional gathering line.
- The mere fact that production from multiple wells flows into a single line does not mean that the line is gathering.
- The mere fact that gas from different locations is commingled does not mean that gathering is occurring, as opposed to a continuation of the production operation.

Discussing the example shown in Figure 1, RP-80 states, “The application would have been equally valid had the situation been one in which production from several leases was commingled by the lease operator at a central production handling facility in the field . . . before being put into transportation. The determinative factor is that the production operation—(preparing) the gas and condensate for transportation—was not complete without the processes performed at the central production handling facility.”

Similarly, DOT’s final safety rule notes, “Commingling of production from multiple fields may, in some instances, occur as part of the production process and does not necessarily mean that gas is in ‘transportation.’”

Add Producers

RP-80 states that the example shown in Figure 2 is designed to illustrate a

FIGURE 2

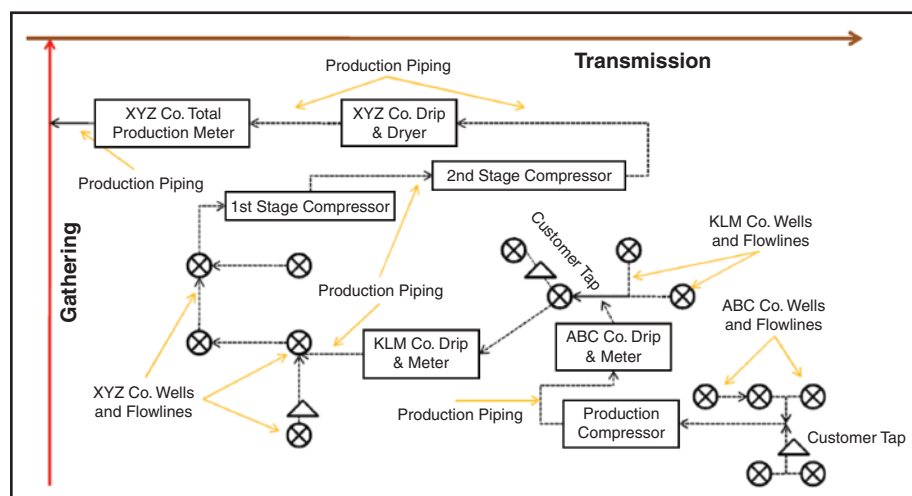




FIGURE 3A

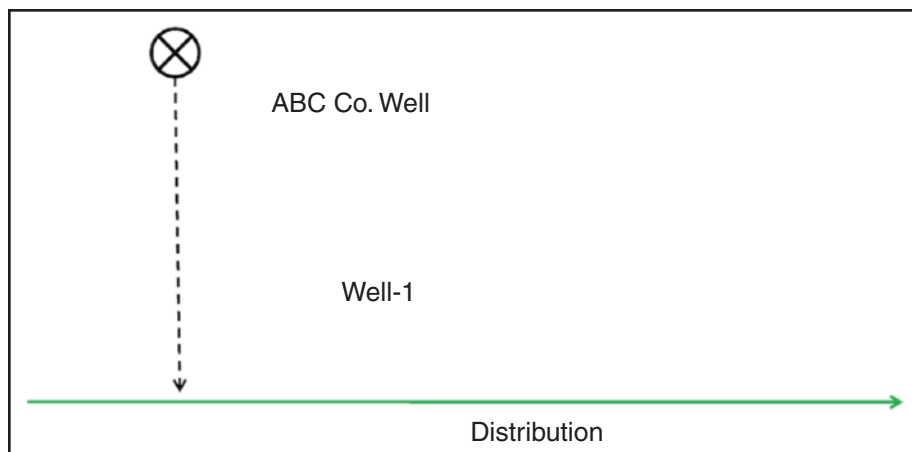
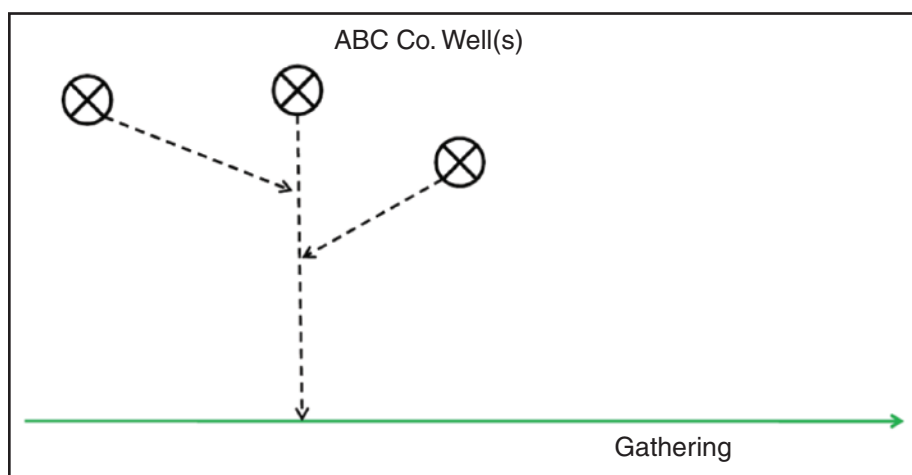


FIGURE 3B



type of production operation found frequently, but not uniquely, in the Appalachian Basin. The related commentary explains that this type of interlacing grid of gas production, gathering and transmission historically evolved to meet the need for economic efficiencies required by mature producing fields and marginal properties.

Figure 2 “illustrates a production operation (owned by XYZ company) delivering natural gas through a total production meter into a gathering company—or local distribution company—owned gathering system. XYZ’s production operation includes:

- Two-stage production compression to lower back pressure on the producing wells and to discharge gas at high enough pressure to get into the gathering line;
- Small gas drips to remove produced fluids;
- A small desiccant gas drying unit to dry the gas; and
- The total production meter station

to measure the volume of gas being delivered to gathering.

ABC and KLM companies are outlying operators whose production will not support constructing and operating a separate production system or laying a separate line to connect to the gathering system.

Figure 2 offers another good representation of the functional analysis required by RP-80, and hence federal law. It illustrates, for example, that multiple wells flowing gas for a single operator into a common line do not automatically make that line gathering. It illustrates that there can be multiple well owners and multiple wells flowing gas into a common line, one after another, without automatically changing the character of the line from production to gathering. And it illustrates that there can be multiple compressors and separation/treatment engaged in by multiple operators during production operations before gathering begins.

The key is whether the activity is intended to prepare the gas for transportation.

If it is, it should be viewed as production and not gathering.

Doing The Analysis

Figures 3A through 3C look at several increasingly more complex configurations to illustrate one method to analyze a particular company’s facilities to determine whether they are unregulated production operations or potentially regulated gathering lines. As required by the DOT rule, each relies heavily on RP-80.

Figure 3A represents a single well connected to a distribution line with no intervening compression, separation or treatment. The description to an analogous configuration in RP-80 notes, “A production operation also may produce directly to a distribution facility, service line of a large end-user, or other pipeline facility with no intermediate gathering function.”

Moreover, the related decision trees are marked to illustrate that gathering never begins in this particular scenario. Rather, “Production continues to the connection with the transmission line. Beginning at the furthestmost downstream point of the production operation (the point of connection with the transmission line), there is no downstream gas processing, gas treatment, commingling, compression, or further gathering extension downstream from the production operation. There is, therefore, no gathering function in this application.”

RP-80 goes on to note that this analysis applies equally to the configuration in Figure 3A. “A similar situation exists if the production flowline connects to a distribution facility, service line of a large end-user, or other pipeline facility,” the rule reads.

Without more to suggest a gathering or transmission function, therefore, this line appears to be properly characterized as production piping and part of a non-jurisdictional production operation.

Additional Wells

Building on Figure 3A, Figure 3B represents ABC company connecting Well-1 first through line P-1 to a gathering line, which from the previous analysis we can conclude is nonjurisdictional production piping. Does the outcome change if ABC ties additional wells with individual flowlines into P-1 to gain access to the gathering line? Again, there is no compression, separation or treatment. Relying once more on RP-80, there is good reason



FIGURE 3C

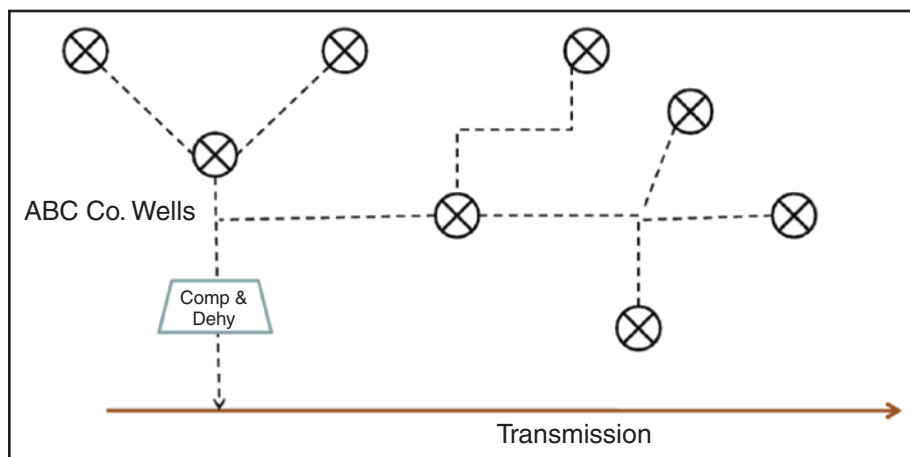
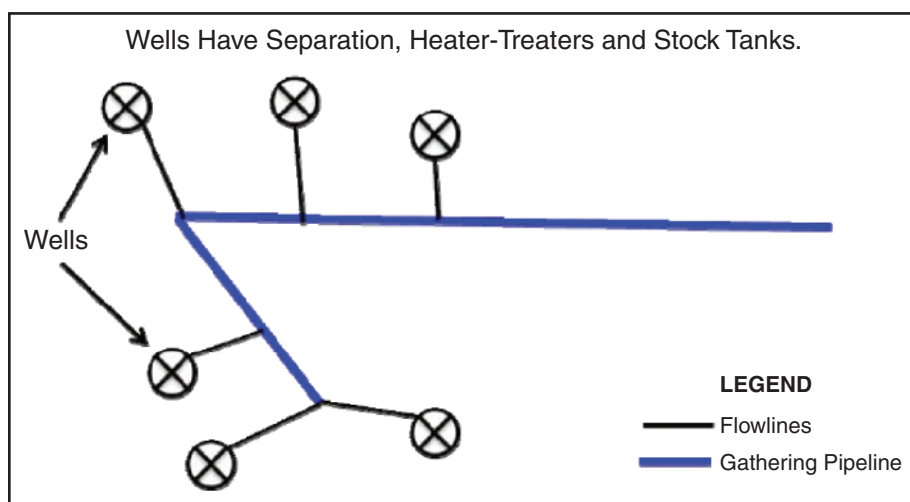


FIGURE 4



to believe that it does not.

The question to ask is whether the function of line P-1 has changed. RP-80 suggests the answer may be no. Discussing basic production operation definitional concepts, RP-80 states, “A gas producer with a gathering line connection may grant one or more other producers access (through flowlines or other production piping) to that connection. In such situations, the piping from the individual wells . . . (is) all part of the production operation as defined in (RP-80).”

There is little reason to believe that a different outcome is warranted when it’s the same producer making the connections, particularly when RP-80 expressly states that owning the facilities is not determinative.

Additional support comes from the similarity of this configuration and a few of the upstream configurations illustrated in Figure 2. As with those configurations, as long as the flowlines serve a production

function, they remain part of the overall production operation. As a consequence, there are good grounds to conclude that Figure 3B is, in its entirety, a production operation.

Larger Development

In the configuration shown in Figure 3C, ABC company has had even greater success in developing an area. It has connected multiple wells behind a compressor station and dehydration facility, with gas ultimately flowing to a transmission line. The compressor is used in this example to lower the back pressure on the wells and enhance production, and the dehydration unit is used to prepare the gas for transportation.

In this case, there is good reason to believe that the lines flowing gas upstream from this equipment properly should be characterized as production and nonjurisdictional. Not only is that conclusion supported by the supplemental definitions for production operation, but it follows

from the representative applications discussed previously. Inset 1 (Typical Satellite Station) for Figure 1, for example, illustrates that multiple wells behind separation and compression can be properly characterized as production. Similarly, the configuration shown in Figure 2 illustrates production operations involving multiple wells behind multiple compressors and a dryer.

A closer case is whether the line at the outlet of the compressor/dehydration facility can be characterized as production piping or the start of gathering. A configuration illustrated in RP-80 suggests the facility’s outlet marks the beginning of gathering. Still, Figure 2 suggests this line could be considered production piping. As a consequence, it would not be surprising if an aggressive regulator characterized this line as gathering, particularly if the line was of anything more than nominal length.

A Cautionary Note

Some regulators and consultants have taken a one-dimensional view of the DOT

GREGORY D. RUSSELL

Gregory D. Russell is a partner in the energy and environmental practice group of Vorys, Sater, Seymour and Pease LLP, one of the leading energy and environmental practices in Ohio. Russell counsels clients on business and litigation matters involving the exploration, production, transportation and marketing of oil and natural gas, and is part of Vorys’ multidisciplinary practice group. He is a member of the Energy and Mineral Law Foundation Board of Trustees, and serves as chairman of both the Ohio Oil & Gas Association Environment and Safety Committee and the Ohio State Bar Association’s Natural Resources Law Committee. Russell graduated summa cum laude in mathematics from Washington & Lee University in 1988, and earned his law degree from Harvard Law School in 1992.



safety rule, asserting that production ends and gathering begins at the point gas transitions to a single-phase flow. To support this view, they often point to the frequently asked questions (FAQs) section posted on the PHMSA Web site, which states—incorrectly—that the dual-use limitation on the downstream endpoint of a production operation “is intended to establish the end of production operations and the beginning of gathering operations at the point where gas transitions to single-phase flow, regardless whether the gas meets the gas quality requirements of the transmission line.”

In the example shown in Figure 4, there is production equipment at each well. Separators and heater-treaters separate the oil, gas and water. The gathering line begins where the first two flowlines intersect and then continues downstream with additional wells adding gas into the line.

That FAQ and illustration introduce needless uncertainty into the DOT rule.

First, there is no mention in any of the background rule-making materials that this was the intended purpose of the limitation referred to in the FAQ.

Second, there is nothing in RP-80 or the DOT rule that characterizes the endpoint of a production operation as “the point where gas transitions to single-phase flow.” Had the authors of RP-80 or PHMSA meant to make that the determinative factor, they could have said so, but they didn’t.

Third, this interpretation appears to rely on one of the concepts expressly rejected by RP-80: that physical characteristics of the facilities and gas are determinative as to whether a facility is production or gathering. Not surprisingly, therefore, this FAQ illustration potentially is inconsistent with several of the representative applications contained in RP-80.

The DOT’s rule requires an operator to start with RP-80, its definitions, supplemental definitions, and representative

applications. The FAQ’s attempt to create a bright-line rule for determining where production ends and gathering begins runs contrary to that mandate and may lead to an inaccurate assessment.

In summary, federal law requires operators and regulators alike to apply RP-80 to determine—based on function—whether a facility is a nonjurisdictional production operation or a potentially jurisdictional gathering line. As a consequence, a production operation remains nonjurisdictional until a defined endpoint is reached, regardless of any intermediate processes or deliveries that may occur.

To minimize the risk of mischaracterization, producers and regulators should pay close attention to the representative applications and supplemental definitions contained in RP-80, and remain alert for the unintended misuse of analytical concepts that have been expressly rejected as controlling. □