GATHERING, TRANSPORTATION, AND STORAGE

Gathering and Processing Services

The Company acquires a substantial portion of its natural gas supplies each year pursuant to the Wexpro Agreements. In many situations, gathering, and/or processing services are required for these supplies before they can enter the interstate pipeline system to travel to the Company's city gates. Therefore, the Company has several gathering and processing agreements.

The majority of the cost-of-service production is gathered under the System-Wide Gathering Agreement (SWGA), between the Company and QEPM Gathering I, LLC (QEPM). QEPM is owned by Tesoro Inc., (Tesoro). Tesoro is an independent refiner and owns and operates midstream (gathering and processing) energy assets.

The Company includes cost data for the gathering and processing functions each year in the SENDOUT modeling process. The Company used the rates from the amended SWGA in this year's modeling process.

The SENDOUT model uses a logical gas supply network to define the relationships between modeling variables. Exhibit 7.1 illustrates those logical relationships for the gathering, processing, and transportation functions as utilized by the model.

Transportation Services

The Company evaluates all transportation options using assumptions that ensure the Company provides safe, reliable, diverse and cost-effective service to its customers. As customer demand grows, the Company continues to review options for firm transportation capacity to ensure reliable deliverability of gas supplies. The Company bases contracting decisions on current and forecasted needs, current and projected capacity availability, to ensure supply diversity and cost. The Company holds firm transportation contracts on Dominion Energy Questar Pipeline, Kern River, Northwest Pipeline, and Colorado Interstate Gas.

Dominion Energy Questar Pipeline

The Company has three transportation contracts with Dominion Energy Questar Pipeline for 798,902 Dth/D (Contract #241), 12,000/87,000 Dth/D (Contract #2945 – volume changes seasonally) and 30,000 Dth/D (Contract #2361). In March, 2017 the Company extended Contract #241 for 798,902 Dth/D until June 30, 2027. This contract provides capacity from multiple receipt points, including Clay Basin, Vermillion Plant, Blacks Fork Plant, Emigrant Trail Plant, Kanda, and interconnects with Northwest Pipeline, Overthrust Pipeline, and White River Hub. With this extension, the Company also signed a Precedent Agreement to upgrade the Hyrum Gate station and expand the total capacity by 100,000 Dth/D. Simultaneously, the Company and Dominion Energy Questar

Pipeline entered into a Facilities Agreement that obligates Dominion Energy Questar Pipeline to construct at least $5,000,000 of delivery point upgrades.

The expansion of the Hyrum gate station and associated capacity will provide necessary increased supplies to the northern area of the Company's distribution system. Dominion Energy Questar Pipeline will complete the upgrades in 2019 and the capacity will be available for the 2019-2020 heating season. The Company is replacing FL 23 starting in 2019 which will increase the takeaway capacity from the station and increase pressures in the area as discussed in the System Capabilities and Constraints section of this report.

Contract #2945 expires on March 31, 2018. This contract provides seasonal capacity with valuable receipt points. It also provides the summertime capacity necessary to transport supplies to the Ryckman Creek storage facility for injections. Contract #2361 expires on November 1, 2021. This contract provides capacity to serve the Company's southern HP system.

No-Notice Transportation Service

Dominion Energy Questar Pipeline provides No-Notice Transportation (NNT) service pursuant to its FERC Gas Tariff and the NNT Service Agreement, as amended, between Dominion Energy Questar Pipeline and the Company. Dominion Energy Questar Pipeline's NNT Service is offered as an enhanced service to supplement its firm transportation service. NNT service utilizes the contracted reserved daily capacity (RDC) of the underlying firm transportation service (T-1) and offers additional flexibility in intraday variation of the supply and demand of that transportation. Specifically, NNT service allows the Company's level of supply to adjust in real time, subject to certain constraints as described herein, to accommodate the increases or decreases in demand throughout the Gas Day.

Under the NNT rate schedule, the Company may nominate transportation capacity the day before the gas flows to reserve sufficient capacity and provide adequate variable sources of supply to match any change in demand. NNT adjustments for increased demand through the Gas Day, which do not cause flow to exceed the associated T-1 RDC are considered firm; however, NNT adjustments which cause the flow to exceed the T-1 RDC on an hourly basis are only offered subject to pipeline operational capacity availability. While no-notice service is "firm up to the RDC," adjustments above the RDC are subject to actual physical constraints on the pipeline and contractual constraints.

The Company relies on the use of NNT service on a daily basis for delivery in response to non-forecasted demand swings, with adjusted Gas Day nominations resulting on 347 days during the 2016-2017 IRP year. Different drivers affect the need for the NNT service between the summer and winter seasons. In winter, NNT allows the Company to adjust to cold-weather-driven demand changes, while in summer, NNT service provides the Company the flexibility to adjust to demand changes based on changes in customer usage.

The Company used NNT service 249 days during the 2016-2017 IRP year to reduce nominations to the city gate by reducing withdrawals or increasing injection into storage. The Company used NNT 98 days to provide for additional storage withdrawal or reduce injections. The maximum daily use of NNT to reduce supply to the city gate was 158,214 Dth with an average daily supply reduction to the city gate of 25,857 Dth. The maximum daily supply increase to the city gates was 203,542 Dth with an average daily increase to the city gate of 11,497 Dth. The NNT usage for the 2016-2017 IRP year is shown in Figure 7.1 below.

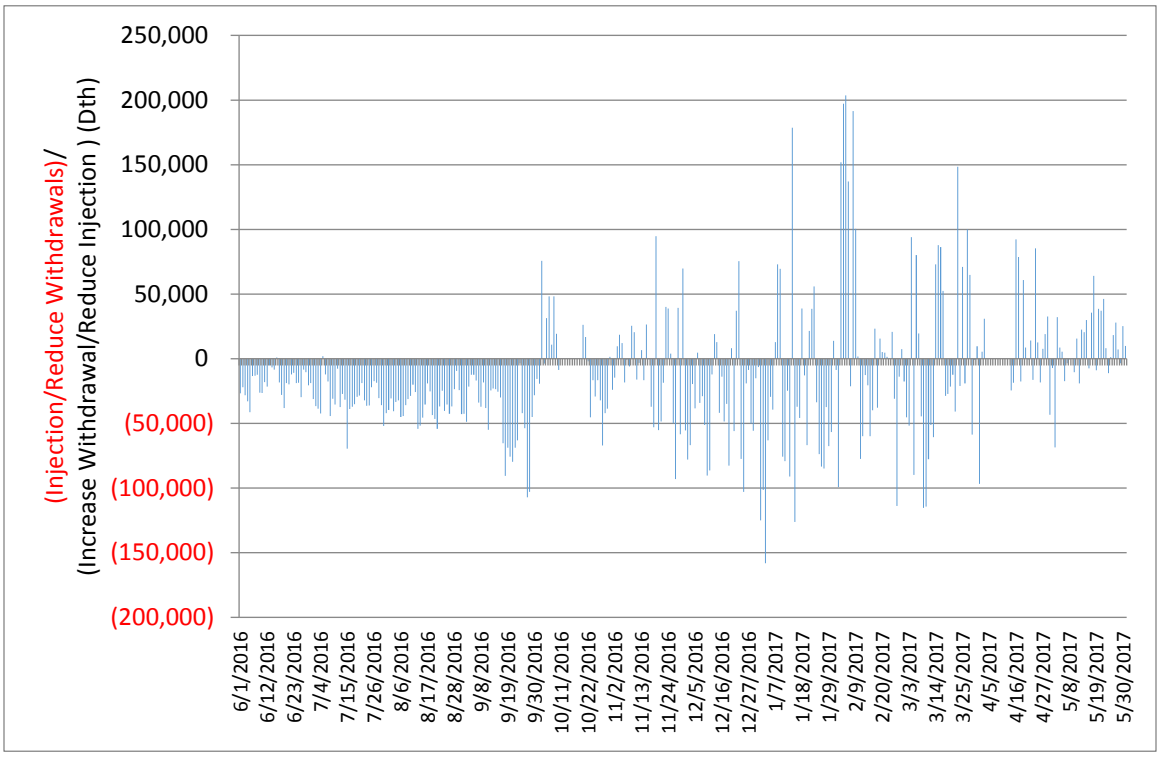

Figure 7.1: NNT Usage – 2016-2017 IRP Year

As part of NNT service, Dominion Energy Questar Pipeline's tariff allows delivery of volumes that exceed the Company's RDC for short periods of time on a best efforts or interruptible basis. The Company and Dominion Energy Questar Pipeline regularly model their systems to quantify this ability to deliver gas at rates that exceed the Company's RDC to ensure that the systems can meet peak-hour demand and peak-flow requirements. While this process quantifies the ability to meet peak-day requirements, this does not guarantee this service will be available during all conditions (the service could be interrupted). This analysis is part of the JOA process described in the System Capabilities and Constraints section of this report. As shown in Figure 7.2, peak-hour demand regularly exceeds the Company's RDC on cold days.

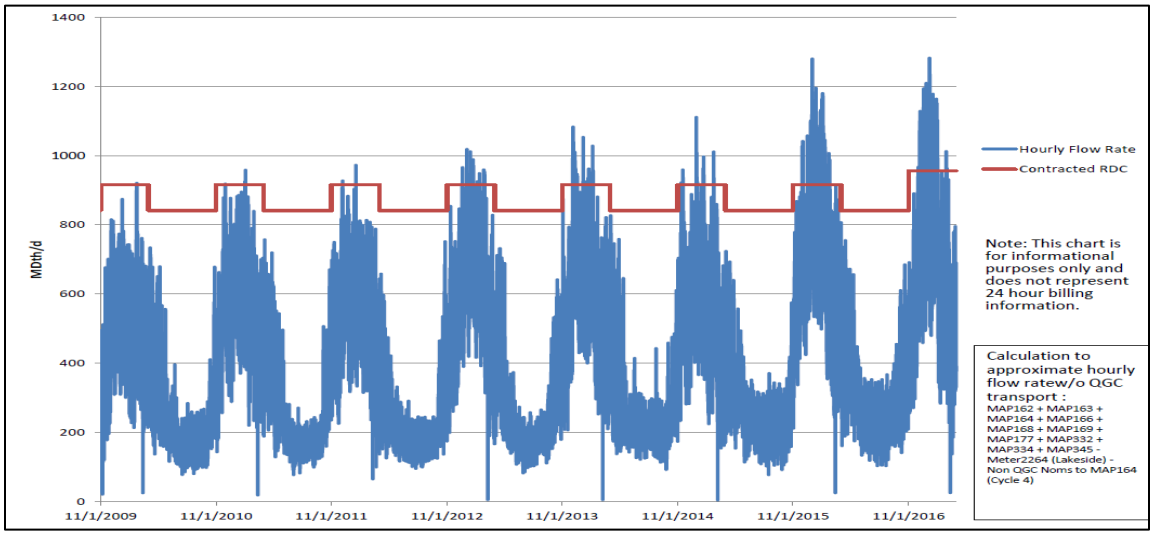

Figure 7.2: Flow Above Contracted RDC –
All Dominion Energy Contracts on Dominion Energy Questar Pipeline

Kern River Pipeline

The Company has two existing transportation contracts with Kern River for 53,000 Dth/D (Contract #1715) and 1,885 Dth/D (Contract #1829). These contracts expire on April 30, 2018 and October 31, 2020, respectively. Contract #1715 will be eligible for Kern River's Period Two rate, or Alternative Period Two schedule upon expiration of the original term. In order to receive the Alternative Period Two rates the contract must be extended for either 10 or 15 years. On May 24, 2017, the Company elected to extend this contract for 10 years at the Alternative Period Two rate.

To meet growing customer demand and ensure access to reliable supply sources, the Company also entered into two new transportation contracts for released capacity on Kern River. One contract was for a permanent release and the other is a seasonal release. These contracts provide firm transportation capacity that will allow the Company to purchase gas at locations with available supply and transport the gas to the Company's city gate stations.

The contract for seasonal release of capacity on Kern River consists of a release of 27,000 Dth/D for the months of November through the succeeding March with a term of November 1, 2017 through March 31, 2032. It also includes a release of 56,925 Dth/D for the months of December through the succeeding February, and 6,000 Dth/D for November and March with a term of November 1, 2017 through March 31, 2031. This capacity will have a path from Opal/Muddy Creek to Goshen with full segmentation rights. This effectively allows the Company to use this as 167,850 Dth/D of firm capacity to serve the Company's system.

The Company also contracted for 30,000 Dth/D of capacity on Kern River (Contract #1992) as part of a permanent release. The permanent release was effective April 28, 2017. As part of the prearranged agreement, the Company temporarily released the capacity at the same rate for the timeframe of May 2, 2017 through September 30, 2017.

The advantage of contracting for a permanent release of an existing contract instead of waiting to contract later is that existing contracts are eligible for "step down" rates and the capacity can be segmented without impacting the rate. This provides incentive over waiting for the capacity to be turned back and offered for bid by Kern River because this would change the provisions regarding segmentation of the capacity. As with Contract #1715, on May 24, 2017, the Company elected to extend this contract for 10 years at the Alternative Period Two rate.

Kern River Period Two Rate Proposals

On September 16, 2016, Kern River posted notice of a conference call on September 22, 2016, for its shippers to discuss a proposed rate alternative for Period Two service. Kern River proposed that Period Two rates for each customer group be lowered by extending the regulatory depreciation levelization period to 25 years using the inputs from its most recent compliance filing with the FERC. Shippers had the option of choosing current rates or the alternative rates. Those electing the Alternate Period Two rates had the option of an initial term of 10 or 15 years with the option to extend to 25 years. Those shippers electing current Period Two service would have the tradeoff of higher rates for a shorter period of time before becoming eligible for Period Three rates.

During the ensuing months, Kern River held a number of conference calls and technical conferences with its shippers to discuss the matter. The Company was an active participant during this process and a vocal proponent of keeping the status quo option available without harm. On December 1, 2017, Kern River submitted to the FERC, a petition for approval of a Stipulation and Agreement reflecting a Settlement by the Shippers. The Settlement was uncontested, meaning all Kern River shippers either supported or did not oppose the Settlement. The Company supported the Settlement. On January 27, 2017, the FERC issued an order finding the Settlement to be fair and reasonable and in the public interest. After approving the Settlement, the FERC directed Kern River to submit a compliance filing no later than 30 days prior to the May 1, 2017 effective date for the new rate option.[70] Kern River submitted its compliance filing on March 2, 2017, and the FERC approved this filing on March 29, 2017.[71]

On March 17, 2017, Kern River proposed to the Company, an additional Period Two option for its 2003-Expansion 15-Year Shippers. Kern River proposed splitting the 25 years of Period Two into two tiers covering a 10-year period (2A) and a subsequent 15-year period (2B). The rates for Tiered Period 2A were lower than the Alternate Period Two rate. The rate for Tiered Period 2B was higher than the Alternate Period Two rate. On March 28, 2017, Kern River filed a tariff revision extending the deadline for eligible shippers to submit binding requests for Period Two Service. The FERC accepted the revision on April 27, 2017. Kern River's new proposed election deadline was the earlier of (i) September 30, 2017, or (ii) thirty (30) calendar days after Kern River files a notice with

[70] Federal Energy Regulatory Commission, Kern River Gas Transmission Company, Docket No. RP17-248, Letter Order from Nathaniel J. Davis, Sr., Deputy Secretary, to Laura Demman, Vice President, Regulatory and Government Affairs, December 1, 2016.
[71] Federal Energy Regulatory Commission, Kern River Gas Transmission Company, Docket No. RP17-516, Letter Order from Monique Watson, Acting Director, Division of Pipeline Regulation, to Laura Demman, Vice President, Regulatory and Governmental Affairs, March 29, 2017.

the Commission that such binding request for Period Two service is due. However, Kern River withdrew the proposal because it was unable to gain consensus support for the Tiered Period 2 proposal.

On May 10, 2017, Kern River filed notice with the FERC that eligible 15-year 2003 Expansion Shippers must submit binding requests for Period Two or Alternate Period Two transportation service no later than June 9, 2017. On May 12, 2017, the FERC Office of Energy Market Regulation issued a letter order accepting the revised tariff record effective May 1, 2017.

Northwest Pipeline

The Company has a contract with Northwest Pipeline for 4,311 Dth/D of transportation capacity with a term expiration of April 30, 2023. This contract has a unilateral cancellation provision under which the Company can terminate the agreement by providing 5-years advanced notice. Unless the contract is terminated, each year the contract is extended for an additional year. Northwest Pipeline cannot terminate the contract. The Company uses this contract to serve the towns of Moab, Monticello, and Dutch John. This contract is segmented in order to provide additional capacity to serve these towns. The Company releases capacity to two contracts that were both renewed on April 4, 2017. These segmentation contracts have no additional reservation costs, but allow for the segmentation of 2,016 Dth/D of this capacity. This allows for a total effective capacity on this contract of 6,327 Dth/D.

Northwest Pipeline Rate Case Settlement

On March 15, 2012, Northwest Pipeline filed a petition with the FERC requesting approval of a rate case settlement (2012 Settlement). This 2012 Settlement met Northwest Pipeline's obligation to file a general rate case by July 1, 2012. The FERC approved the 2012 Settlement on April 26, 2012.

The 2012 Settlement required Northwest Pipeline to file a general rate case with the FERC not later than July 1, 2017, for rates to become effective not later than January 1, 2018. Northwest Pipeline initiated discussions with its shippers in the fall of 2016 in an effort to reach a settlement and avoid the requirement to file a rate case in 2017. After numerous meetings and the exchange of several offers and counteroffers, Northwest Pipeline and its shippers reached a settlement (2017 Settlement). All of the shippers actively participating in the discussions supported the 2017 Settlement including the Company. Ninety-two percent of its total shippers (including those who did not participate in the discussions) supported the 2017 Settlement and 8 percent did not oppose.

Northwest Pipeline filed its Petition for Approval of Settlement and a Stipulation and Settlement Agreement with the FERC on January 23, 2017. Due to the lack of a quorum, the FERC was unable to take action to approve the 2017 Settlement. As recommended by Commission Staff, Northwest Pipeline filed a tariff modification extending its deadline in the 2012 Settlement to file a general rate case from July 1, 2017, until 120 days following a final Commission order on the 2017 Settlement. The FERC

Office of Energy Market Regulation issued a letter order on April 12, 2017 accepting the Tariff records to extend the deadline.

Colorado Interstate Gas

The Company has a contract with Colorado Interstate Gas (CIG) for 400 Dth/D of transportation capacity with a term expiration of October 31, 2025. The Company uses this capacity to serve the town of Wamsutter, Wyoming. The Company also uses the Foothill gate station to serve Rock Springs, WY from CIG with purchases at the city gate. The Company is continuing to review potential alternatives to serve the Foothill station using firm transportation on CIG.

Storage Services

The Company holds firm contracts for storage services with Dominion Energy Questar Pipeline at four underground gas storage fields to respond to seasonal winter and peak demands. As noted above, the Aquifers include the Leroy, Coalville, and Chalk Creek facilities. The Company also holds contracts for the Clay Basin storage facility. The Company commenced service on its negotiated Firm Storage Service (FSS) agreement with Ryckman Creek on April 1, 2017.

Dominion Energy Questar Pipeline owns the Aquifer storage facilities and the Company utilizes them primarily for short-term peaking needs. The Company fully subscribes the Aquifer facilities. The Company reviewed these storage resources as part of its planning process and plans to extend the contracts prior to their expiration in 2018.

Dominion Energy Questar Pipeline also owns Clay Basin, a depleted dry gas reservoir, and its shippers utilize the facility for both baseload and peaking purposes. The Company's contracted inventory for storage facilities is outlined in the table below:

Table 7.1

Facility	Maximum Inventory (MDth)
Clay Basin	13,419
Leroy	886
Coalville	720
Chalk Creek	321
Ryckman	2,500

Clay Basin Storage

The Clay Basin storage facility is located in the northeast corner of Utah, roughly 50 miles from Rock Springs, Wyoming. The Clay Basin field has two producing sandstone formations, the Frontier and the Dakota. The Frontier formation is still producing natural gas today and the Dakota formation is used for storing gas. The Dakota formation was largely depleted by 1976 when construction of the storage facilities began. Today, the Clay Basin reservoir has the largest capacity of any underground storage facility in the Rocky Mountain Region.

The Company receives storage service at Clay Basin under rate schedule FSS. Billing under rate schedule FSS consists of two monthly reservation charges and separate per unit usage fees for injection and withdrawal. The first reservation charge is based on each shipper's minimum required deliverability (MRD) as stated in each shipper's storage service agreement. The second monthly reservation fee is an inventory capacity charge based on each shipper's annual working gas quantity.

The tariff provisions governing Clay Basin ensure that customers will receive their MRD, at a minimum. To the extent that shippers have inventory in excess of their MRD, additional deliverability is available for allocation according to predetermined formulas. The Company exceeds its contract MRD regularly throughout the heating season, but, for purposes of peak-day analysis, the Company assumes that only its MRD will be available during a peak day.

Between October 1, 2016 and April 30, 2017, the Company utilized the Clay Basin storage facility to provide more than 11,800 MDth of supply to meet customer demand. This included 72 days with withdrawals that exceeded 100 MDth and 31 days with withdrawals that exceeded 150 MDth. Clay Basin also provided operational flexibility by providing 61 days of injection during this period.

Leroy and Coalville Storage

Since 2000, the operation of the Leroy and Coalville storage facilities have been modified to provide more flexibility and enhance storage efficiency. Following the end of the withdrawal season, the inventories in these facilities have maintained a working gas inventory of approximately 30–50% of maximum capacity through the summer months. Previous practice was to completely deplete the facilities each year at the end of the withdrawal season. The advantages of this revised mode of operation are as follows:

- Wells in the Leroy and Coalville facilities are not "watered out" at the end of the withdrawal cycle, which improves well efficiency when storage injections are initiated in the fall
- Injection compression fuel gas requirements are reduced (only 50-70% of the working capacity needs to be injected in the fall to fill the reservoir)
- A shorter, more predictable, and easily managed withdrawal/depletion schedule occurs at the end of the heating season
- A shorter injection season for reservoir refill is required in the fall

- With the Leroy and Coalville inventories at 50%, the flexibility exists to inject significant volumes due to gas displacing water in the reservoir

In general, current operating practices at both the Leroy and Coalville facilities are as follows:

- Injections into the reservoirs commence in August or September from an initial inventory of approximately 45-55% of maximum working inventory. Injections continue until an inventory of approximately 75% of maximum is reached by early October. Injections follow a specific schedule determined by well and reservoir characteristics which minimizes the potential for "fingering" (gas being trapped behind water in the aquifer and resulting in gas loss).
- In early October, scheduled injections are halted to facilitate Dominion Energy Questar Pipeline's testing conducted at the Clay Basin storage facility. The testing requires two days of injection at a controlled rate followed by a 7-day no flow period for pressure stabilization. Depending upon system demand and the gas supply situation during the no flow period, the 75% inventory at Leroy and Coalville affords the flexibility to either inject or withdraw to help meet system balancing requirements.
- Following the Clay Basin test, controlled injections again commence in Coalville and Leroy and they typically reach maximum inventory by early November.
- The Company utilizes both Coalville and Leroy to meet peak-load requirements through the heating season, to manage the morning and evening load swings and to offset the cost of purchased gas during a high-pricing event. During periods of lower winter demand, the Company refills the reservoirs to maximum inventory when possible.
- During March, when the need for peaking withdrawals has passed, the Company partially draws down the reservoirs to inventories of approximately 50% in preparation for Clay Basin testing (conducted during April). The April Clay Basin test consists of a few days of a withdrawal period followed by 2 days of controlled withdrawal. Following the withdrawal period, Dominion Energy Questar Pipeline shuts Clay Basin in for pressure stabilization. Maintaining Coalville and Leroy at the indicated inventory range during this period provides the flexibility to either inject or withdraw based upon system balancing needs.
- At the end of the spring Clay Basin test, the Company draws Leroy and Coalville down to inventory levels of approximately 45–55% and then maintains both at that level until refill commences in the fall. Periodically, the Company will completely draw down one aquifer when necessary to conduct an inventory volume verification analysis.

Chalk Creek Storage

Chalk Creek is utilized differently than the Leroy and Coalville facilities. This facility has more restrictive injection requirements but still provides high deliverability. Due to the nature of the Chalk Creek storage formation and in order to minimize losses, Dominion Energy Questar Pipeline does not currently practice partial inventory maintenance during the summer. Operation at Chalk Creek is as follows:

- Injections commence in early November following a controlled injection profile
- By mid-December, the reservoir reaches maximum inventory
- In early March, gas in the reservoir is withdrawn in a controlled manner and it remains empty until refill injections commence in the fall

2016-2017 Aquifer Usage

During the 2016-2017 heating season, the Company used the Aquifers to provide supply during periods of cold temperatures in October, November and again during a high-sendout period in the beginning of January 2017. On January 6th, 2017 the Aquifers were used as the primary source of supply to replace supply shortfalls from multiple other sources. This highlighted the benefits of the Aquifers for reliability purposes. The Aquifers are regularly held in reserve on cold days however, their deliverability is required to provide 135 MDth of supply on a peak day. This restricts the Company from holding them in reserve as temperatures drop and demand increases toward peak-day demand.

In order to continue to provide operational flexibility during the Clay Basin testing period in April 2016, the Company withdrew inventory from the Aquifers in March. The Company adjusted the inventory in the Aquifers in order to provide maximum flexibility during the Clay Basin test in April.

The Company was able to utilize the Aquifers for both injection and withdrawal during this time period as shown in Figure 7.4 below. This flexibility is critical to operations when Clay Basin is not available.

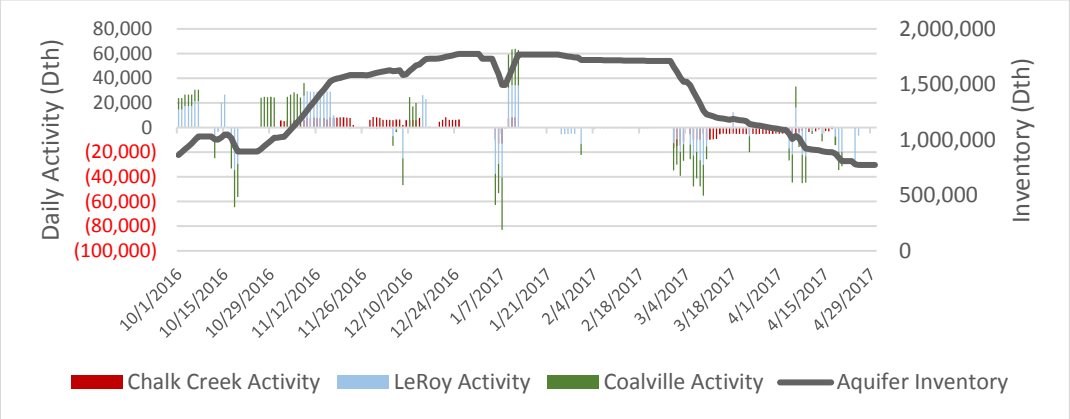

Figure 7.4 –Aquifer Usage 2016-2017 Heating Season (Oct 2016 through April 2017)

Ryckman Creek Gas Storage

The Ryckman Creek storage project involves the utilization of a partially depleted oil and gas field located approximately 25 miles southwest of the Opal Hub in southwestern Wyoming (see Exhibit 7.7).[72] The facility interconnects with Kern River, Dominion Energy Questar Pipeline, Northwest Pipeline, Overthrust Pipeline, and the Ruby Pipeline. Effective April 18, 2011, the Company entered into a Firm Gas Storage Service Precedent Agreement with Ryckman for 2.5 MMDth of storage capacity.

Initially, gas withdrawn from the Ryckman Creek facility did not meet the gas quality standards of any of the interconnecting pipelines. In order to resolve this issue, Ryckman Creek installed a nitrogen rejection unit (NRU) at its facility. However, before it was fully operational, there was a fire at the NRU. On April 22, 2013, Ryckman posted a critical notice effective April 20, 2013, indicating it had shut down the storage facility due to the fire and invoking the force majeure provision set forth in Section 6.19 of the Ryckman Tariff. Ryckman Creek suspended all services. Ryckman Creek subsequently reinstated storage services without a resolution of the gas quality issue. Subsequently, Ryckman discovered significant structural defects to the facility requiring redesign and reconstruction of the facility.

On January 25, 2016, the Company sent Ryckman Creek a letter informing Ryckman Creek of the Company's intent to terminate its Precedent Agreement. On February 2, 2016, Ryckman Creek filed for Chapter 11 bankruptcy before the United States Bankruptcy Court for the District of Delaware. The bankruptcy filing stayed all actions against Ryckman Creek and effectively stayed the Company's ability to terminate the Precedent Agreement. The Company filed a Notice of Claim with the bankruptcy. The Company and Ryckman ultimately settled the matter and storage service commenced on April 1, 2017. The settlement contemplated a term of four years, ending on March 31, 2021 and included default provisions and termination provisions favorable to the Company.

Storage Modeling in SENDOUT

The Company models the costs, contractual terms, and operating parameters for each of its contracts with storage facilities in SENDOUT. The Company also needs a forecast of the storage inventory available at the beginning of the first gas-supply year for each storage facility for the SENDOUT modeling process. When the Company modeled storage and inventory, it expected that the inventory at Clay Basin on June 1, 2017 would be approximately 2.36 Bcf.

Related Issues

[72] Ryckman Creek Resources, LLC, FERC Gas Tariff, Original Volume No. 1, Section 3, System Map, Version 1.0.0.

Gas Scheduling Coordination

Following a large scale electric power outage in the southwestern United States in February 2011, the FERC and industry groups began closely looking at ways to better coordinate the resources of natural gas power generation facilities and the interstate FERC-regulated pipelines that deliver gas to those power plants.[73] The FERC issued an order on March 20, 2014 to commence a rulemaking on the Coordination of the Scheduling Processes of Interstate Natural Gas Pipelines and Public Utilities (NOPR). FERC proposed changes to: (1) the natural gas operating day (Gas Day); and (2) the natural gas intra-day scheduling practices. FERC gave natural gas and electric industries until September 24, 2014 to reach a consensus through the North American Energy Standards Board (NAESB). FERC requested comments by November 28, 2014.[74] After many meetings, NAESB filed comments with FERC indicating that the group had achieved consensus regarding the intra-day scheduling practices, and that the parties could not reach consensus regarding the start time of the Gas Day. AGA, the Natural Gas Council and many other parties also filed comments.

On April 16, 2015 FERC issued Order No. 809, which changed the nationwide Timely Nomination Cycle deadline for scheduling natural gas transportation from 11:30 a.m. Central Clock Time (CCT) to 1:00 p.m. CCT, revised the intraday-nomination timeline to include an additional intraday scheduling opportunity during the Gas Day, adopted revisions to provide contracting flexibility to firm natural gas transportation customers through the use of multi-party transportation contracts but did not change the start time of the Gas Day (see Exhibit 7.8). FERC required interstate natural gas pipelines to comply with the new business practice standards beginning on April 1, 2016.
In Order No. 809, the FERC also requested that NAESB explore the potential of the gas and electric industries for faster, more streamlined, computer-based scheduling. On March 30, 2017, NAESB submitted its status report to the FERC documenting this effort. NAESB was unable to garner the necessary support from the Wholesale Gas Quadrant (WGQ) to implement new standards and/or change existing standards. The WGQ consists of producers, interstate pipelines, local distribution companies, end users and the natural gas services segment. On April 12, 2017, FERC Acting Chairman LaFleur responded by thanking all the stakeholders for their efforts and acknowledging that the record developed will help to inform the FERC in its future deliberations and will help inform the industry in its continuing efforts to coordinate the integration of the gas and electric industries. Acting Chairman LaFleur indicated that she was not requesting any further efforts currently in responding to Order No. 809.

[73] See http://www.ferc.gov/industries/electric/indus-act/electric-coord.asp
[74] See http://www.ferc.gov/media/news-releases/2014/2014-1/03-20-14-M-1.asp#.U5YnJ03jhaQ

Gas Quality/Interchangeability

Almost all of the gas delivered to the Company's system comes from interstate pipelines (Dominion Energy Questar Pipeline, Kern River, CIG, and Northwest Pipeline). Each of these interstate pipelines manages gas quality to limits defined in its tariff. These limits have been effective in equitably meeting the delivery needs of shippers and downstream customers.

The most prevalent measure of fuel gas interchangeability in the U.S. is the Wobbe Index.[75] Natural gas appliances are rated to operate safely and efficiently within a specific Wobbe Index range. The Company used a consulting firm to establish the Wobbe operating ranges for its service areas. For example, Exhibit 7.2 shows the upper and lower Wobbe operating limits for the Utah Wasatch Front (North) region for various levels of heating value and specific gravity. Dominion Energy Questar Pipeline updated this exhibit this year to show the daily averages for 2016 of various sources of natural gas on Dominion Energy Questar Pipeline's system flowing to customers in this region. This IRP contains charts for other Utah regions (Exhibit 7.3 and Exhibit 7.4). Exhibit 7.5 and Exhibit 7.6 show the same information for the Wyoming eastern and western regions. Should Wobbe values become a concern in the future at any point delivering gas to the Company, there are a number of tools that the Company can use to manage gas interchangeability including injecting inert gases (or air) in the gas stream, injecting propane and blending supplies from various sources.

There is some concern relating to gas quality conditions in the town of Altamont, Utah. The tap feeding Altamont is located less than 50 ft away from the outlet of a large gas processing plant. This plant feeds into Dominion Energy Questar Pipeline and that gas flows directly into the Company's station serving the town of Altamont. When the processing plant is operating correctly the gas is interchangeable. However, when there is an upset, there is a possibility that the Wobbe number could rise above the upper limit of 1,425.

To date, the average daily gas quality remains below the defined upper limit. The Company took steps to reduce potential problems that may arise with a plant upset. The Company installed an activated carbon filter vessel on the inlet to Altamont to catch any contaminants that could be flowing that direction, thereby ensuring that the gas delivered to customers there meets the Wobbe requirements. The Company also sent technicians into every Altamont customer's premises to inspect all natural gas appliances and confirm that all were properly adjusted and were functioning correctly. Finally, the operator of the processing plants agreed to flare any gas that is out of specification for more than a few minutes. Though the Company expects that these actions will effectively mitigate the risk associated with a plant upset, the Company will continue to monitor the situation into the future.

It is difficult to predict the interchangeability of future gas streams. The Company

[75] The Wobbe Index number consists of the higher heating value of a fuel gas divided by the square root of the specific gravity (relative to air) of the fuel gas. Fuel gases with the same index number generate the same heat output over time from a burner given constant pressure and orifice size.

may need to arrange for additional processing or blending in the event it is required to ensure that the gas received from the transmission systems of any of its upstream pipelines are compatible with the needs of the Company's customers. The Company will evaluate this on an ongoing basis as it bears the burden of processing pipeline-quality gas to meet its specific requirements.

The Company has been contacted by parties with gas supplies, such as biomethane producers, interested in delivering gas directly into the Company's system. In response to these requests, the Company implemented a tariff change to include gas-quality standards to ensure that the gas stream is interchangeable and safe for its customers.