Lucky Number Seven
- Get at least seven hours of sleep per night to help prevent calcium buildup in your arteries

Keep the Pressure Off
- Cut back on salt and alcohol, favor healthy eating habits, and manage stress

Be Active
- Aim for 30 minutes/day, five days/week of moderate exercise
Columbia Pipelines Storage
Rich Fulcher discusses Columbia’s current Storage position

Columbia Pipelines Operations
Steve Stonestreet provides an overview of Operations

Columbia Pipelines Construction and Maintenance
Tom Koontz discusses Columbia’s upcoming Construction and Maintenance

Columbia Pipelines Customer Services
Cindy Burnette shares helpful tips & news from Customer Services
Storage Update
Rich Fulcher – Operations Planning
Storage Position – Inventory Remains Below Typical Levels

Physical Working Gas Inventory (BOM) as of February 1

<table>
<thead>
<tr>
<th>Date</th>
<th>TCO Storage Inventory (MMcf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/15/2019</td>
<td>92,969</td>
</tr>
<tr>
<td>2/16/2018</td>
<td>98,354</td>
</tr>
<tr>
<td>2/17/2017</td>
<td>117,678</td>
</tr>
</tbody>
</table>

Working gas in underground storage compared with the 5-year maximum and minimum.

1.882 Tcf as of Friday, February 8, 2019

Source: U.S. Energy Information Administration
Storage Working Gas Inventory – 2018-19 vs Previous Years

Daily Physical Storage Activity

- 2018-19 Activity
- 2000 through 2017-18 Activity
- Average Daily by Month

Graph showing daily physical storage activity from 1-Nov to 1-Apr for 2018-19 and 2000 through 2017-18, with the average daily activity by month represented in the graph.
Storage Working Gas Inventory – 2019 vs Previous Years

Percent Working Gas Inventory by Operating Area as of February 18

- **Op. Area % of Storage Capacity**
  - 2 (NY)
  - 3 (WV)
  - 4 (S Central PA)
  - 5 (N OH)
  - 6 (OH)
  - 7 (OH)
  - 8 (SW PA/NW WV)
  - Total Storage

- **Operating Area**
  - **2019 Percent Full**
  - **Difference from 5-Year Average February 18**

<table>
<thead>
<tr>
<th>Operating Area</th>
<th>2019 Percent Full</th>
<th>Difference from 5-Year Average February 18</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 (NY)</td>
<td>18%</td>
<td>(27)%</td>
</tr>
<tr>
<td>3 (WV)</td>
<td>20%</td>
<td>(2)%</td>
</tr>
<tr>
<td>4 (S Central PA)</td>
<td>15%</td>
<td>(12)%</td>
</tr>
<tr>
<td>5 (N OH)</td>
<td>24%</td>
<td>(16)%</td>
</tr>
<tr>
<td>7 (OH)</td>
<td>34%</td>
<td>(3)%</td>
</tr>
<tr>
<td>8 (SW PA / NW WV)</td>
<td>37%</td>
<td>(6)%</td>
</tr>
<tr>
<td>10 (E WV)</td>
<td>15%</td>
<td>(22)%</td>
</tr>
<tr>
<td><strong>Total Storage</strong></td>
<td>32%</td>
<td>(3)%</td>
</tr>
</tbody>
</table>
## Firm Storage Service Tariff

### Withdrawal

<table>
<thead>
<tr>
<th>Month</th>
<th>Minimum Percent of SCQ</th>
<th>Maximum Percent of SCQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov</td>
<td>No Min</td>
<td>40%</td>
</tr>
<tr>
<td>Dec</td>
<td>No Min</td>
<td>40%</td>
</tr>
<tr>
<td>Jan</td>
<td>No Min</td>
<td>40%</td>
</tr>
<tr>
<td>Feb</td>
<td>0% 10%</td>
<td>30%</td>
</tr>
<tr>
<td>Mar</td>
<td>0% 10%</td>
<td>20%</td>
</tr>
<tr>
<td>Apr</td>
<td>Max SCQ carryover is now 35% 25%</td>
<td></td>
</tr>
</tbody>
</table>

### Reminders

- SCQ - Storage Contract Quantity
- MDSQ - Maximum Daily Storage Quantity
- MDIQ - Maximum Daily Injection Quantity
- MMIQ - Maximum Monthly Injection Quantity
- MDIQ = 1/25*MMIQ April through October
- MDIQ = 1/30*MMIQ November and December
- MDWQ is expressed as a percentage of remaining SCQ

### Daily

<table>
<thead>
<tr>
<th>% of SCQ in Inventory</th>
<th>MDWQ as % of MDSQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% to 30%</td>
<td>100%</td>
</tr>
<tr>
<td>Less than 30% to 20%</td>
<td>80%</td>
</tr>
<tr>
<td>Less than 20% to 10%</td>
<td>65%</td>
</tr>
<tr>
<td>Less than 10% to 0%</td>
<td>50%</td>
</tr>
</tbody>
</table>
Operations Overview

Steve Stonestreet – Commercial Operations
Weather

- November - 22% colder than normal
- December - 12% warmer than normal
- January - .5% warmer than normal
- February MTD - 1.9% warmer than normal
- Winter to Date - 1.4% warmer than normal

Critical Days

- Weather
- Storage positions
- Other Operating Conditions
2019 MXP / LEX / T-System Pigging Plan
Spring / Summer 2019 Pig Runs

• **Reason for Pigging**
  - Gather information through internal examination of the pipeline

• **To Minimize Commercial Impact**
  - Coordination of MXP, LEX, and T-System runs to minimize date overlap
  - Utilizing pigs with speed control by-pass
  - Volumes may be redirected to other pipelines where capacity exists
  - Depending on capacity utilization, flows may not be impacted

• **MXP**
  - Reassess pipeline movement and integrity since initial pigging - approximately every 6 weeks

• **LEX**
  - Continued monitoring of pipeline for movement and integrity

• **T-System**
  - Modernization program made piggable in Summer 2018

• **Potential remediation of findings, if any, is determined following analysis of run results**
Spring / Summer 2019 Pig Runs

- Dates and impacts subject to change
  - Unforeseen reasons, i.e. weather, results from other runs, etc.
  - Frequently monitor the Construction and Maintenance Schedule for latest updates

- Pigging Services and Operations Planning are working toward a finalized plan that will minimize interruptions, such as 24 hour pigging, etc.

- Commercial impacts can vary
  - No commercial impact
  - Non-firm reductions
  - Firm reductions
  - Reservation Demand Credits will be determined per the process set forth in the General Terms and Conditions, Section 38 of TCO’s FERC Gas Tariff.
Projects Update

GXP
- Expected partial in-service of 530k on February 26th
- Remaining capacity - 1st quarter 2019

MXP
- Partial In-Service
  - 10/9/18 - 400k
  - 1/18/19 - 800k
  - 2/12/19 - 320k
- Remaining capacity of approximately 1.1 BCF expected 1st quarter 2019
Construction & Maintenance
Tom Koontz – Lead Representative
3/10 – 3/17 (2 day outage dates TBD), Summerfield CS maintenance with potential impact to Firm and Non-Firm through LXPSEG, Lone Oak A, and Sherwood B constraints.

3/4 – 3/8, MXP 100/200 Line pigging from LEX line to Saunders Creek. Potential impact to Firm and Non-Firm through MXPSEG and Sherwood B constraints depending on section.
Construction & Maintenance – 1983 & Milford

2/27 – 2/28 Milford CS, Compressor maintenance. Potential impact to Firm and Non-Firm through EASTON constraint and also MS 640230 and B18 (TGP).

3/4 – 3/8, Line 1983 Pipeline pigging from Waynesburg CS to Smithfield CS. Impact to Firm and Non-firm at Meter 640313 and 642824. Also Non-firm at 642702, 640314 and potential impact to CLENWAYN, ADALSMIF, SMITHFLD and Sherwood A constraints.
## Construction & Maintenance Schedule

### Table: Construction & Maintenance Schedule

<table>
<thead>
<tr>
<th>Status</th>
<th>Projected Start Date</th>
<th>Projected End Date</th>
<th>Operating Area</th>
<th>Location</th>
<th>Modernization (Y/N)</th>
<th>Type of Work</th>
<th>Operational Impact</th>
<th>Market Area</th>
<th>Potential Restriction Level (Point/Segment)</th>
<th>Potential Impact to Firm Services (High/Med/Low)</th>
<th>Firm Point/Segment</th>
<th>Potential Impact to Non-Firm Services (High/Med/Low)</th>
<th>Non-Firm Point/Segment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ongoing</td>
<td>March 27, 2018</td>
<td>January 31, 2018</td>
<td>8</td>
<td>Line 3918</td>
<td>N</td>
<td>Pipeline Work</td>
<td>None</td>
<td>40</td>
<td>Paint</td>
<td>None</td>
<td>High</td>
<td>None</td>
<td>High</td>
</tr>
<tr>
<td>R Ongoing</td>
<td>December 10, 2019</td>
<td>February 1, 2019</td>
<td>3</td>
<td>PA-17</td>
<td>N</td>
<td>Pipeline Work</td>
<td>None</td>
<td>15</td>
<td>Paint</td>
<td>High</td>
<td>834644</td>
<td>High</td>
<td>835905</td>
</tr>
<tr>
<td>R Pending</td>
<td>January 3, 2019</td>
<td>January 3, 2019</td>
<td>3</td>
<td>PA-17</td>
<td>N</td>
<td>Pipeline Work</td>
<td>PM-17 leading into Baldwin out of service due to leak and slip repair</td>
<td>16</td>
<td>Paint</td>
<td>High</td>
<td>835320, 834944</td>
<td>High</td>
<td>835905</td>
</tr>
<tr>
<td>Pending</td>
<td>January 3, 2019</td>
<td>January 3, 2019</td>
<td>6</td>
<td>Station Camp C6</td>
<td>N</td>
<td>Compressor Work</td>
<td>Repair Valves on Unit 2</td>
<td>16</td>
<td>Segment</td>
<td>Low</td>
<td>K41 Low MA15 (MARTHUFF)</td>
<td>Low</td>
<td>K41 Low MA15 (MARTHUFF)</td>
</tr>
<tr>
<td>Pending</td>
<td>January 8, 2019</td>
<td>January 8, 2019</td>
<td>6</td>
<td>Station Camp C6</td>
<td>N</td>
<td>Compressor Work</td>
<td>PM maintenance work on Unit 4.</td>
<td>13</td>
<td>Segment</td>
<td>Low</td>
<td>K41 Station Camp MA13 (K15087)</td>
<td>Low</td>
<td>K41 Station Camp MA13 (K15087)</td>
</tr>
<tr>
<td>Pending</td>
<td>January 21, 2019</td>
<td>January 22, 2019</td>
<td>6</td>
<td>Station Camp C6</td>
<td>N</td>
<td>Compressor Work</td>
<td>PM maintenance work on Unit 4.</td>
<td>13</td>
<td>Segment</td>
<td>Low</td>
<td>K41 Station Camp MA13 (K15087)</td>
<td>Low</td>
<td>K41 Station Camp MA13 (K15087)</td>
</tr>
<tr>
<td>Pending</td>
<td>January 24, 2019</td>
<td>January 30, 2019</td>
<td>6</td>
<td>Station Camp C6</td>
<td>N</td>
<td>Compressor Work</td>
<td>PM maintenance work on Unit 4.</td>
<td>13</td>
<td>Segment</td>
<td>Low</td>
<td>K41 Station Camp MA13 (K15087)</td>
<td>Low</td>
<td>K41 Station Camp MA13 (K15087)</td>
</tr>
<tr>
<td>Pending</td>
<td>January 29, 2019</td>
<td>January 29, 2019</td>
<td>6</td>
<td>Station Camp C6</td>
<td>N</td>
<td>Compressor Work</td>
<td>Scheduled power outage resulting in full station outage.</td>
<td>16</td>
<td>Segment</td>
<td>High</td>
<td>K41 Low MA15 (MARTHUFF)</td>
<td>High</td>
<td>K41 Low MA15 (MARTHUFF)</td>
</tr>
<tr>
<td>Pending</td>
<td>May 10, 2019</td>
<td>May 10, 2019</td>
<td>3</td>
<td>Grant C5</td>
<td>N</td>
<td>Compressor Work</td>
<td>None</td>
<td>18</td>
<td>Segment</td>
<td>Midterm</td>
<td>Northern Kentucky OAS (K15087), Lambeth West MA19 (CEI5087), Leach MA19 (LEIC5087)</td>
<td>Midterm</td>
<td>Northern Kentucky OAS (K15087), Lambeth West MA19 (CEI5087), Leach MA19 (LEIC5087)</td>
</tr>
<tr>
<td>Pending</td>
<td>Summer 2019</td>
<td>Summer 2019</td>
<td>3</td>
<td>MA-80</td>
<td>Y</td>
<td>Pipeline Work</td>
<td>Pipe replacement from Outboard to Hadlock</td>
<td>18</td>
<td>Segment</td>
<td>Medium</td>
<td>Northern Kentucky OAS (K15087), Lambeth West MA19 (CEI5087), Leach MA19 (LEIC5087)</td>
<td>Medium</td>
<td>Northern Kentucky OAS (K15087), Lambeth West MA19 (CEI5087), Leach MA19 (LEIC5087)</td>
</tr>
<tr>
<td>Pending</td>
<td>Summer 2019</td>
<td>Summer 2019</td>
<td>3</td>
<td>MA-80</td>
<td>Y</td>
<td>Pipeline Work</td>
<td>Pipe replacement between Hendrick and Foss Gate</td>
<td>18</td>
<td>Segment</td>
<td>Medium</td>
<td>Northern Kentucky OAS (K15087), Lambeth West MA19 (CEI5087), Leach MA19 (LEIC5087)</td>
<td>Medium</td>
<td>Northern Kentucky OAS (K15087), Lambeth West MA19 (CEI5087), Leach MA19 (LEIC5087)</td>
</tr>
</tbody>
</table>
### Potential Impact to Services

**None** – No interruption of service expected

**Low** – Green: Work will be going on; however, unless something unforeseen occurs - No impact is anticipated.

**Medium** – Yellow: Based on forecasted conditions at time work is planned, no commercial impact is anticipated. Risk factors are greater than “Low.”

**High** – Red: It is definite that some level of commercial interruption will occur. A separate critical posting will be made detailing commercial impact to customer’s nominations.

<table>
<thead>
<tr>
<th>Date</th>
<th>Station Camp</th>
<th>C/N</th>
<th>Compressor Work</th>
<th>Maintenance Work on Unit 3</th>
<th>Segment</th>
<th>Potential Impact</th>
<th>Customer Nominations</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 29, 2019</td>
<td>0</td>
<td>N</td>
<td>PM</td>
<td>PM maintenance work on Unit 3</td>
<td>10</td>
<td>Low</td>
<td>KAI Station Camp MA12 (KAI15CY8)</td>
</tr>
<tr>
<td>May 15, 2019</td>
<td>3</td>
<td>G</td>
<td>Compressor Work</td>
<td>Scheduled outage resulting in full station outage</td>
<td>16</td>
<td>Segment</td>
<td>High</td>
</tr>
<tr>
<td>Summer 2019</td>
<td>L</td>
<td>M</td>
<td>Pipeline Work</td>
<td>Pipe replacement from Gullodden to Hedwed</td>
<td>18</td>
<td>Segment</td>
<td>Medium</td>
</tr>
</tbody>
</table>
Demand (Reservation) Credits

- High – Red: It is definite that some level of commercial interruption will occur. A separate Critical posting will be made detailing commercial impact to customer nominations.
- TCO FERC Tariff Section 38 -

38. RESERVATION CHARGE CREDITS

Transporter will provide reservation charge credits to a Shipper under Rate Schedules FTS, FTC, NTS, NTS-S, FSS, FSS-M, SST, FBS and TPS when it is unable to schedule or deliver up to the Shipper's Transportation Demand under the applicable service agreement on a firm daily basis, subject to the following conditions:

- Section 38.2(a) – Customer must nominate:
  - Timely and Evening cycles
  - From primary receipt point to primary delivery point
  - Capacity must remain unutilized
FSS Reminders

• April 1 Storage Inventory Level raised from 25% to 35%

• FSS Minimum Withdrawal Quantity of 10% of SCQ – Waived for February and March 2019

• FSS Customers Limited to MDIQ and MMIQ (MMIQ for February is 10% of SCQ and MDIQ is 1/25th of the MMIQ)

• No-Notice Nominations after the ID3 Cycle – Overrun is not authorized and is subject to TFE Penalties on Critical Days

• Watch for your Ratchet Day! Withdrawal Quantity decreases when inventory goes below 30%
Mark Your Calendar for Next Month’s Call:

March 20, 2019
2:30 ET / 1:30 PM CT

Additional Questions or Comments?
Email: Cindy_Burnette@transcanada.com