

Tap Sizing and Approximate Cost

As of 11/17/11

Pipe Tap Size

The tap size can be approximated using the following table. If flows are anticipated to increase, the tap size should be based upon the future projected flow.

| | | Approximate Pipeline Flowing Pressure | | | | | | | |
|----------------------|--|---------------------------------------|----|-----|-----|-----|-----|-----|------|
| | | 25 | 50 | 100 | 200 | 400 | 600 | 800 | 1000 |
| Estimated Flow Mcf/d | | | | | | | | | |
| 50 | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 100 | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 250 | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 500 | | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 1,000 | | 4 | 4 | 4 | 2 | 2 | 2 | 2 | 2 |
| 2,500 | | 6 | 6 | 4 | 4 | 2 | 2 | 2 | 2 |
| 5,000 | | 8 | 8 | 6 | 4 | 4 | 4 | 2 | 2 |
| 7,500 | | 8 | 8 | 6 | 6 | 4 | 4 | 4 | 2 |
| 10,000 | | 12 | 10 | 8 | 6 | 4 | 4 | 4 | 4 |
| 20,000 | | NA | NA | 10 | 8 | 6 | 6 | 4 | 4 |
| 50,000 | | NA | NA | NA | 12 | 8 | 8 | 6 | 6 |
| 75,000 | | NA | NA | NA | NA | 10 | 8 | 8 | 8 |
| 100,000 | | NA | NA | NA | NA | NA | 10 | 8 | 8 |
| 125,000 | | NA | NA | NA | NA | NA | 12 | 10 | 8 |
| 150,000 | | NA | NA | NA | NA | NA | 12 | 10 | 10 |
| 175,000 | | NA | NA | NA | NA | NA | 14 | 12 | 10 |
| 200,000 | | NA | NA | NA | NA | NA | NA | 12 | 12 |
| 250,000 | | NA | NA | NA | NA | NA | NA | 14 | 12 |
| 275,000 | | NA | NA | NA | NA | NA | NA | NA | 12 |

Approximate Costs for Tap Installation*

The table below provides the approximate costs for the installation of a tap on Columbia's pipeline. These costs are based upon the tap being installed on a Columbia pipeline up to 16". Actual costs may vary depending on the specific site requirements.

| <u>Tap Size</u> | <u>Approx. Cost</u> <u>ANSI 300/600</u> |
|-----------------|--|
| 2 | \$49,000 |
| 4 | \$94,000 |
| 6 | \$109,000 |
| 8 | \$117,000 |
| 10 | \$124,000 |
| 12 | \$136,000 |

*Approximate costs includes accounting gross up for tax purposes