



## Dewpoint Measurement Application #4

# Natural Gas Production and Transmission

- Application** Natural gas in production facilities, and in transmission lines.
- Problem** Moisture in natural gas can cause several problems:
- Corrosion of the pipeline—water acts by itself or with any acid components in the gas to cause corrosion.
  - Hydrate formation—water reacts with various hydrocarbons in the gas stream to form complex hydrate molecules which can eventually cause blockage in the line.
  - Lower heat content—high levels of water will lower the BTU value of the gas, making it less valuable.
- Solution** Continually monitor gas lines at key points, either when one gas stream connects to another or when transferring custody to a third party. Periodically check in-line instruments with a portable moisture analyzer, to see if sensor recalibration is required.
- Equipment** AMT-EX in-line instrument will work for this application. Many plants will require intrinsically safe operation. The natural gas industry generally talks in terms of “pounds of water per million cubic feet at standard atmospheric pressure and a temperature of 60°F.” This is simply referred to as “pounds” (or lbs). A typical in-line range will be 0-20 or 0-30 lbs. If a portable instrument is chosen, please select a model which is intrinsically safe, such as the SADPmini Ex. For continuous monitoring applications, a glycol trap and sampling system should be used to prevent coating of the sensor. Natural gas will also cool rapidly when depressurized, and a wet stream can saturate or freeze internally when depressurized. Therefore a low measurement flow and 1/8” tubing (for temperature equalization) is best.
- Advantages** All Delta moisture analyzers are calibrated to the highest possible accuracy, and are suitable for custody transfer applications. In addition, several models can be “automatically calibrated” via ambient air or standardized against our portable instruments. This will minimize the downtime for the customer.