Facility : C-1 Pipeline **Date :** 5/28/2019

Enter data in shaded fields to calculate gas volumes released due to leak and blowdown of system.

Circular Hole

Hours of leak	0.0416667
Diameter of hole (inches)	0.0625
Upstream Pressure	300
Volume of Gas Leaked	0.05

Crack

Hours of leak	
Length of Crack (inches)	
Width of Crack (inches)	
Upstream Pressure	
Volume of Gas Leaked	0.00

Calculations:

Volume of Gas Leaked (MSCF) = Diameter*Diameter*(Upstream Gauge Pressure + Atmospheric Pressure)*Hours of Leak

****Reference: Pipeline Rules of Thumb Handbook, 3rd Edition, McAllister. Page 260. Assuming Standard Temperature and Pressure (14.7 psi and 60 F)**

Footage of Pipe blowndown	22123.2	
Initial line pressure	300	
Diameter of Pipe (inches)	6	
Volume of Gas Blown Down	107.74763	0.00000

Calculations:

Volume of Gas Blown Down (MSCF) = Volume at pipeline conditions (ft3)*(Gauge Pressure (psig)+Atmospheric Pressure 13.7 psi)*Standard Temperature (60F)
/(1000 scf/mscf)*Standard Pressure (14.7psi)*Temperature(F)*Z Factor
Volume at pipeline conditions (scf) = Diameter/12 (ft)*Diameter/12 (ft)*PI/4*Length of pipe (ft)
****Reference: Gas Pipeline Hydraulics, Menson (2005) Pages 132-134. Assuming the Ideal Gas Law and Tpipeline = Tatm.**

Total Gas Loss	107.80 MSCF	0.11 MMSCF

Comments:

Name: Alena Miro Title : Senior Environmental Engineer