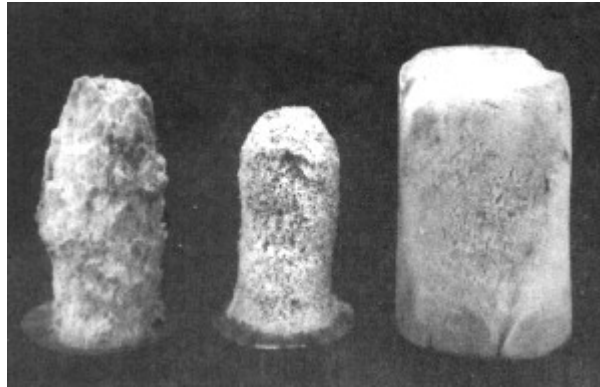


Girard Progressive Pigging Method



The above photograph illustrates how the soft foam is worn away to indicate the true opening in the pipeline. The pigs on the left were the first ones run and indicate a severely restricted pipe. The pig on the right was the last pig run after cleaning and indicates a clean pipe.



Pigs run through a scaled 8" water line.
Left two pigs: medium hardness type RBS. Right two pigs: soft type YBS.



Pigs run through a 6" line. Left pig: type RBS. Right two pigs: type YBS. Polyurethane coating at base shows original diameter.

The following general pigging guidelines, tailored toward badly scaled water lines, are applicable to other types of scaled lines as well. The pigs may be propelled using water, air, nitrogen, or sometimes the product in the line.

1. Isolate the section to be cleaned from the system so that pigs don't get lost.
2. Check to make sure that all in-line valves are full port and are fully opened.
3. Turn on the water to double-check the direction of flow, to be sure the water exits at the correct exit location, and to observe the flow rate.
4. Run a full size swab through the line to sweep out loose material and to gauge the true opening in the pipe. Hard scale will wear away the soft foam and the diameter or true

opening may be more closely determined (see photo above). Many times it is

5. recommended to run another swab through the section to remove additional loose scale.
6. Run a criss-cross pig just slightly larger than the true opening to begin the cleaning process. It may be necessary to run a full size swab behind the criss-cross pig to improve the seal and allow the criss-cross pig to continue its travel. Continue this process until a pig is discharged from the line in reusable condition.
7. On unlined ductile iron, cast iron, or carbon steel pipes, run a criss-cross wire brush pig of the same size as the previous pigs. Again a full size swab may be required to obtain a better seal. Use only criss-cross pigs on lined pipe, PE or PVC pipe.
8. Increase the size of the pigs in small increments (1/4" to 1/2") depending on the hardness of the scale. Continue to run swabs behind the pigs as necessary.
9. Run two full size pigs (criss-cross or wire brush) once the full I.D. has been attained.
10. Run a full size swab to sweep out loose debris and compare its condition to the first swab which was run, as illustrated by the above photo.
11. Flush the section until the flow is clear of all debris.
12. Shut off the flow and drain all lateral lines into the main line. After completing the drain down, flush the main line one last time.
13. Ideal pigging speed is between 200 and 300 feet per minute.