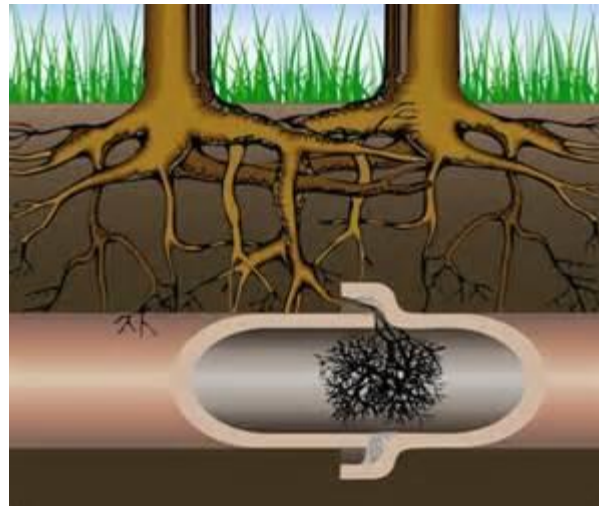


Root Control Pilot Program Results



Roots

- * CAWD number one problem in the Collection system are roots from trees.
- * The majority of sewer pipes at CAWD are Vitrified Clay Pipe which are more prone to root intrusion.
- * Tree roots cause structural deterioration, grease, and debris buildup, and toxic and corrosive atmospheres in sewer pipes.
- * The number one cause of Sanitary Sewer overflows at CAWD caused by tree roots.

Why Chemical Root Control



Benefits

- * Eliminating routine cutting and emergency calls.
- * Eliminating costly dig-ups and pipe replacement.
- * Treating areas with difficult easements.
- * Adding years to the life of sewer pipes.
- * Cost

Steps taken a Root Control Pilot Program

- * Choose sewer lines to receive chemical treatment using data compiled from CCTV and cleaning records.
- * CCTV 1000' of sewer with roots to set a base line prior to chemical treatment.
- * Meeting with the treatment plant to find out the allowable amount of chemical the plant can handle per day.

Contractor applies chemical root control



Post treatment inspection

- * CCTV crew inspected the same 1000' used prior to treatment.
- * Comparison will be made of pre-treatment and post-treatment.



Lab Results

* Collection Date	Influent	Effluent
* 7/18/2013	Not Detected	No Sample
* 8/8/2013	Not Detected	No Sample
* 10/31/2013	320 ug/L	10 ug/L

Conclusion

- * The contractor foamed 5,143 feet of 6inch pipe and 16 manholes on October 30th.
- * Total cost for root treatment was \$1.32 per foot \$6788.76 .
- * Total Chemical use 1.5 gallons for the entire 5,143 feet and 16 manholes.

Frequently Asked Questions

- * How soon will we see results? The roots are killed on the day of treatment. However, this is not the same as seeing the results. Root decay depends on many factors, including type of tree, mass of roots and flow conditions. After months of decaying, the root may or may not be gone, but it will be able to support a stoppage.
- * Why is chemical treatment better than cutting? Cutting is only a temporary solution; when roots are cut out of the pipe they grow back quicker and heavier, eventually destroying the pipe. With cutting, the long-term costs of replacement or relining will far exceed the cost of maintaining the sewer with chemical treatment.
- * Does this process kill the tree? A very small percentage of the tree root system actually lives in the sewer pipe. The treatment will only kill roots inside the pipe and approximately twelve inches outside the pipe. Manufacturers guarantee not to kill any above-ground vegetation.