Centralia Sentinal article from Sept. 19, 2011

Smoke testing can reveal problem areas

Recent smoke test of Wamac's sewer system showed more than 10 problems, helped identify where repairs were needed

BY MATT BARBA
SENTINEL NEWS STAFF

WAMAC — With a little smoke and the right fan, engineers can detect the location of defects in a community's sewer system which helps public works employees make repairs more quickly and efficiently.

For smaller communities like Central City and Wamac, smoke testing a sewer system can identify problem areas and in some cases help prevent problems from becoming bigger and costlier to fix.

The process is simple: a gasoline engine-powered fan placed over a manhole cover blows artificial smoke through the sewer system and the smoke will rise out of any openings that it encounters, whether they are intentional or not.

Last week, engineers from Curl & Associates, Inc. performed a smoke test for the city of Wamac as a demonstration of what the process is capable of doing for the community. Wamac was chosen as the winner in a contest the engineering firm held earlier this year.

Starting near a pump station located along Wabash Avenue, the smoke poured mostly from the pump station's unsealed access

Please see **Smoke,** Page 3A

Sentinel Photo/MATT BARBA

JUST A TEST — Lucas Grote of Curl & Associates, Inc. preps a smoke machine that will blow smoke through the city of Wamac's sanitary sewer system while Wamac Public Works Employee Butch Altom, LEFT, and Curl & Associates engineer Ron Bradham look on. Smoke testing is used to find defects in a sewer system, such as broken pipes or empty drain traps.

Smoke:

Continued From Page 1A

panels but there were a few problem areas indicated by the initial test.

One such area was just north of the pump station where the sanitary and storm sewers ran near to each other — the smoke was coming up out of the ground from the storm sewer, meaning there was a hole in both that allowed the smoke to pass through.

Ron Bradham, an engineer with Curl & Associates, said identifying such problem areas is the purpose of conducting a smoke test.

"That isn't supposed to happen," said Bradham, referring to the smoke coming from the storm sewer, "But that's why we do these so we know exactly where the problems are."

In a normal system free of defects the smoke can exit through manhole covers and plumbing vents in houses, as well as any other bypass lines built into the system.

Defects in the system can range from broken pipes to dry plumbing traps in houses and when the smoke is pushed through the system those defects are made visible, either by smoke coming from the middle of the ground for the former or smoke entering a house in the latter case.

Bradham said in the event that smoke does enter a home the resident should not worry as the smoke used in the process is non-toxic and does not stain. It can be removed by ventilating the house.

However, smoke entering a home is evidence of a plumbing problem in the home, including the aforementioned defective traps.

The costs associated with smoke testing a sewer system can range depending on the size of the area to be tested but the problems that can be found during testing can save a community much more.

In just a couple of hours one afternoon last week, Bradham said he and others testing Wamac's sewer system were able to find about a dozen problems, which he said is unusual for a single smoke test.

Part of the success of last week's test came as a result of the favorable weather conditions because of the little amount of rain the area had received in the previous two weeks. The drier the ground the more likely it is to crack and allow smoke to escape.

Wet weather can have such an impact on smoke tests, Bradham said, that water flowing into a pipe through a crack or break would prevent the smoke from escaping and indicating a problem location.

mbarba@morningsentinel.com