

# Smoke and sewers



Alex Cerda operated an engine with a fan attached in order to pump smoke into a manhole to help detect sewer gas leaks in the Old Pen. (Rawlins Daily Times, Jerret Raffety)

## ***Foul-smelling gas smoked out of Old Pen lines***

**By Bridget Manley**

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It's not unusual for folks to look for the unusual, the unexpected, in the Wyoming Frontier Prison in Rawlins.

On more than one occasion, ghost hunters have come to the former prison armed with an array of electronic devices. Their mission: To find evidence that spirits of prisoners who died there still walk its cold and silent halls.

On Tuesday morning, another group gathered at the prison's front gates. But instead of carrying infrared or video cameras, they brought a small engine and a substance called liquid smoke.

They set out to locate sewer gas, a substance as ethereal as a ghost but ... well, a little bit nastier.

Sewer gas has been making a stink lately at the Frontier Prison, commonly known as the Old Pen.

Historic Site Director Tina Hill has become desensitized to the gas over time, she said, but other people have complained about a foul smell wafting from the prison's long-empty cells.

Sewer gas, or hydrogen sulfide, is the byproduct of solid waste decomposing in sewer lines. Usually, water collected by a P-trap, a piece of curved pipe, prevents the gas from backing up into buildings.

When those P-traps dry up, however, the gas can back up into homes, offices or other facilities, carrying its odor of rotten eggs with it.

Mark Court, a registered wastewater specialist with Wyoming Rural Water, believes that's what happened at the Old Pen.

Hill estimated that there are close to 400 toilets in the former penitentiary, most of which haven't been used since the prison closed in 1981.

The Old Pen isn't the only place where sewer gas has been a problem. Residents will occasionally complain about the gas in their homes.

"Every once in a while we get a call," said Adolf Bernal, utilities division superintendent for the city of Rawlins.

So far, however, the gas hasn't caused any major problems.

The amount of sewer gas leaking into the prison is so minimal that it won't harm visitors and employees, Court said. But, in large quantities and in confined spaces, sewer gas buildup can be dangerous.

"Sewer gas is extremely toxic and extremely explosive," he said.

Tuesday's operation was designed to flush the fetid gas out of the pipes and see where it was leaking into the aging penitentiary. It also served as training for city employees from around Carbon County.

Court and city employees went to work Tuesday morning, setting the engine over a manhole in the industrial center behind the prison. They then connected a pressurized can of liquid smoke to the engine.

The engine's heated manifold evaporates the liquid, turning it into a non-toxic vapor, Court said.

The engine then shoots the smoke down through the manhole and into the sewer pipes.

After getting the engine started, Court lead workers through the prison's echoing corridors. As they passed through the cell blocks, they passed their flashlight beams over empty bunks and rust-crusted sinks, looking for traces of white smoke.

They found a thin haze in the prison's classroom and the Old Hole, a kind of solitary confinement chamber.

But, when they came to the cafeteria, they hit the jackpot. White vapor billowed out of floor vents in the kitchen, bakery and dish washing areas, indicating where sewer gas was leaking out of the sewer pipes and into the Old Pen.

To fix the problem, he recommended that a check valve be installed. The device would allow sewage to flow from the Old Pen into the city sewer system but would prevent any city sewage flowing into Old Pen sewer.

"This is pretty crazy," one Rawlins city worker said as he watched the vapor seep through the former penitentiary.

But, for Court, seeing white vapor pour out of cracks and crevices was the highlight of his day.

"This is the (most fun) part of my job, right here," he said, beaming. "I love doing this."

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