



HK Pipelines

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Journey to the Center of Des Moines

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By Andy Meral, CEO



Late last winter Hydro-Klean teamed up with Snyder & Associates, an Ankeny engineering firm, to conduct an inspection of the 7th Ward Drainage Ditch in East Des Moines. The purpose of the inspection was to gather information for a study on how to improve storm water drainage in this area, which has a history of flooding and related storm water problems.

The 7th Ward Drainage Ditch is a main artery in storm water drainage. Its upper end is an open ditch, while the lower end is a square storm sewer approximately six feet wide and four and one-half feet high. The storm sewer runs through a residential area and then commercial properties before it reaches its outlet south of the Iowa State Fair Grounds.

The construction of the enclosed portion of the sewer dates back to the 1930's. Some parts are composed of concrete, while others are fashioned out of wood. A physical entry was the chosen means of inspection, as it would provide positive and cost effective means of evaluating the condition of the storm sewer.

Snyder & Associates chose Hydro-Klean to perform this safety sensitive inspection, due to the extensive regulatory education and experience that it's people have. The storm sewer is considered a "Confined Space," which means certain OSHA conditions must be met before entering.

In addition to confined space safety requirements, there would also need to be other special equipment custom built to facilitate the inspection. Consequently, small, four-wheeled carts—equipped with 12-volt batteries, portable lights, and storage for other equipment, were made for each of the entrants. Due to the low ceiling, the entrants used the carts to sit on as they traversed down the 8,000 feet of sewer. The carts reduced fatigue and served to transport other gear.

The first phase of the inspection had a single person walk through the storm sewer to verify that the inspection team and their gear could pass through its entire length. At this time it was noted that some of the wood was in poor structural condition, but still pass-

able. Reitz Engineering, an Ames structural engineering firm, also participated by inspecting and analyzing the structural condition of the storm sewer. This inspection took two days and went well, in spite of the below-freezing temperatures,

With the exception of a few areas that were piled up with rocks, gravel, and silt, the storm sewer was, for the most part, able to convey a considerable percentage of its flow capacity. The structure, however, has places that are weak and will need repair in the near future.

Hydro-Klean used a special electronic locating device that referenced various points of the storm sewer that were in need of repair. The sending unit for the device was with the crew doing the interior inspection, while a ground crew that followed above ground used the receiving unit. This enabled the crews to pinpoint exact areas in need of repair and mark them for future reference. The locating device was also used for safety by tracking the exact location of the crew below grade.

Several interesting elements came out of this project. The entrants were equipped with clubs for self defense in the event that wild animals were encountered. Although none were, many tracks indicated that at least some large raccoons inhabited the sewer at times. There were, however, some two-legged creatures encountered just a short distance inside of the inlet of the storm sewer. Four teenage boys were quite surprised to meet up with the inspection crew and immediately asked who they were. One of the Hydro-Klean employees told him, "We're the sewer cops". The kid responded, "Oh, no, bummer!"

One interesting item found was an above-ground swimming pool that had apparently washed into the sewer by the flood of 1993. The ground crew that followed the entrants only had a few exciting moments, mainly with dogs that were protecting their master's yards.

Besides the life form encounters, there were some interesting stories told to the inspection crew by a few of the

local residents. One said that the storm sewer was a popular way for youngsters to get into the state fair years ago. They apparently entered the sewer, traveled down it under the fair grounds, and then hoisted each other up through manholes located in the fair grounds. This would have been quite a feat, as the manhole covers are quite heavy. Another resident told of an inspection that had been conducted some years



HK Sr. Service Technician, Kim Krebs, creeps along a specially made cart, while inspecting the wooden structure of an old storm sewer beneath the streets on the east side of Des Moines.

ago deep inside the sewer by none other than the mayor himself.

The recent inspection provided the City of Des Moines with the information that will be helpful in future decisions on improvements of storm water control.

