

Research on the transfer Pressure Pipe (the No.10 trunk line in Atami)

Period

2004.3 ~ 2004.3

(Purpose)

This study is carried out for the sanitary sewage transfer pressure pipe (Atami No.10 trunk line D350mm) started to use by Atami City on June first, 2003, for the purpose of making initial hydrogen sulfide countermeasure, grasp the hydraulic phenomenon of sanitary sewage flowing into transfer pressure pipe on the way from the height location while considering the negative pressure does not occur, and examination of basic connecting structure.

(Result)

1. Hydrogen sulfide countermeasure

According to the flow shown in Fig.1, "inflow of spring water", "air and oxygen implantation", and "chemicals injection" of three methods were examined as hydrogen sulfide countermeasures, and the technique of countermeasures was evaluated by the consideration of the cost.

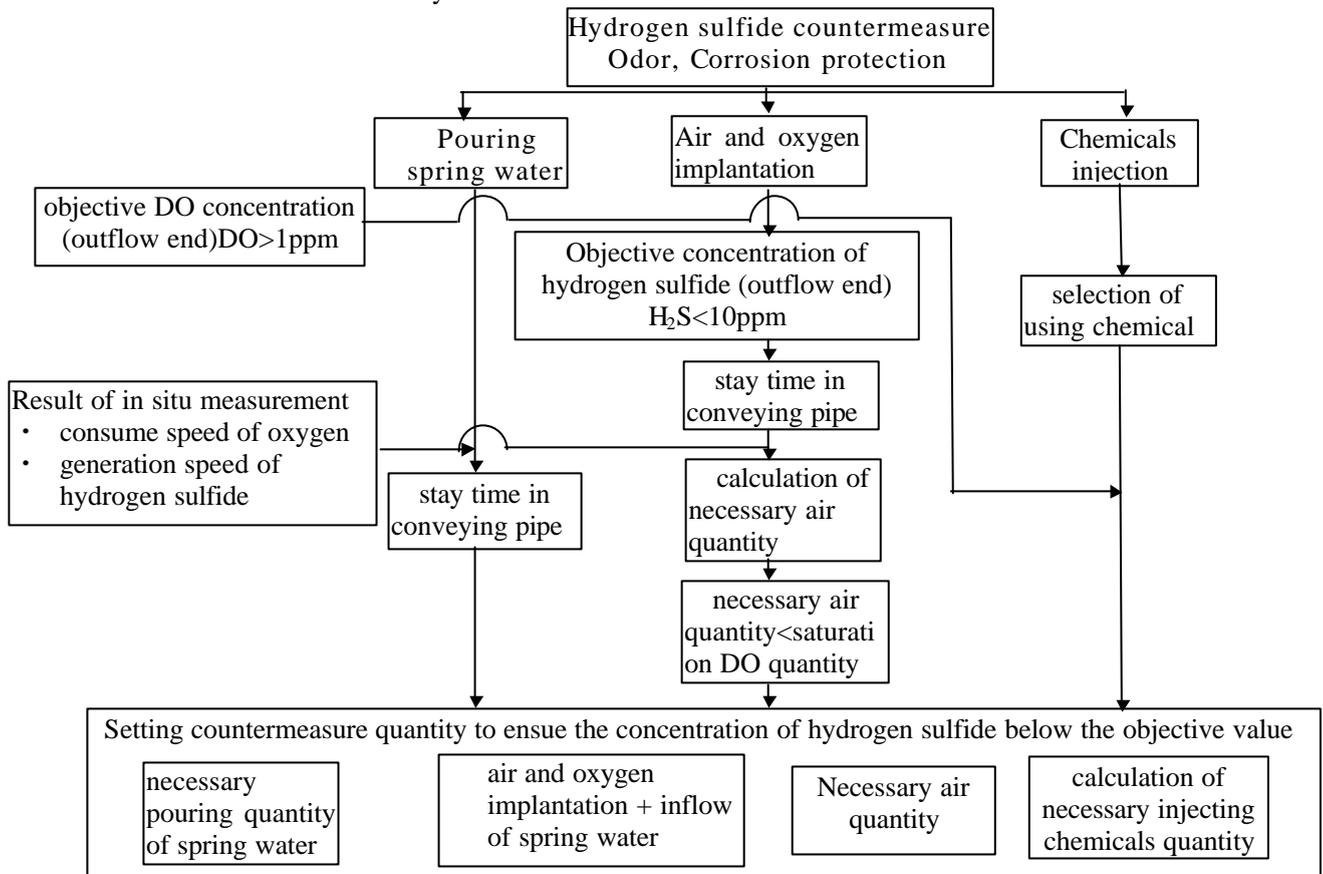


Fig.1 Examination flow chat of hydrogen sulfide countermeasure

2. Grasp the hydraulic phenomenon of sanitary sewage flowing into transfer pressure pipe on the way from the height location and examination of basic connecting structure

The analysis of unsteady flow was carried out in 3 cases (general plan discharge of pump station, plan inflow quantities of drainage on the way, both are simultaneous inflow) for manhole shapes of 3 types (?2000mm, ? 1000mm, f200mm), as well as calculation of the hydraulic gradient was conducted with Williams formula used for design of pump and sanitary sewage inflow of the transfer pressure pipe. As the result, it was confirmed that all hydraulic gradients are lowers than ground level in any cases, and water level is not rose by the difference of the manhole shape etc..

Consignment study from the Atami City.

Researchers : Takahashi Ryuuiti, Kiriara Takashi, Matuda Hiroki, Kamata Kouzou

Key Words

hydrogen sulfide, odor control, conveying pipe