

## Study of Approach to New Sewerage Development Approach in Unsewered Areas

Year of research

2010

Construction of efficient sewerage

### (Purpose)

As of the end of FY 2009, the sewerage population had reached a coverage rate of about 74%. Although this represented a certain amount of progress in the level of development nationwide, there are still remarkable regional gaps. In addition to being in a severe financial situation, some of the municipalities that are late in expanding sewerage are suffering adverse effects of changes in social conditions, such as a population decrease. Under these circumstances, this study was conducted to develop innovative methods to efficiently overcome such problems in unsewered areas and to establish them as technologies appropriate for wide application.

### (Results)

(1) Survey and study of innovative sewerage development methods

A questionnaire survey was conducted of engineering ideas and examples of the application of innovative development methods employed in municipalities.

(2) Study of technical evaluations of innovative sewerage development methods with an eye toward their general application

In addition to providing technical assistance to municipalities undertaking social experiments as part of a "Quick Project for Prompt Sewerage Development," we conducted technical evaluation of innovative sewerage development methods with an eye toward their general application.

As a result of the evaluation, it was decided to shift the positioning of the development methods being studied as social experiments. The policy was shifted from experimenting with "Technology whose performance is to be evaluated" to "Quick piping (exposed piping/simplified covering)," which is positioned as a "Development method whose wide application is possible."

In addition, an interim summary of the results of verifying the [effectiveness of] "Prefabricated extra-small treatment facilities" was prepared.\*

\* A method involving the purchase of existing treatment facilities (utilizing a contact aeration process or membrane separation method) for use in wastewater treatment facilities

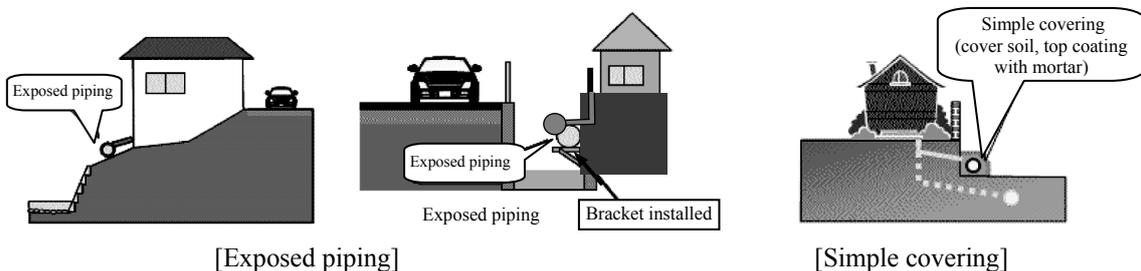


Fig. 1. Quick piping (exposed piping/simple covering)

(3) Study of technical standards for practical application of innovative sewerage development methods

The development method, "Reuse of dug soil as pipe foundation," had been completely verified by the end of 2009 and accepted as a technology that could be widely utilized. For this technology, a Technology Application Guide (draft) designed to promote its application has been prepared.

(4) Study for a reevaluation of sewerage development method in general use

A questionnaire survey was conducted on the state of the employment in municipalities of the "Use of liquefied stabilized soil as refill material," a development technology verified and accepted for general use in 2009,

### (Conclusion)

Among eight development methods under experimental use as social experiments, verification was completed in 2010 for five methods. These were "Use of liquefied stabilized soil as refill material," which was accepted for general use by the end of 2008; three methods accepted for general use at the end of 2009, "Continual adoption of improved inverted siphons," "Variable slope sewer construction using bent pipes," and "Reuse of dug soil as pipe foundation"; and "Quick piping (exposed pipe/simple covering," whose verification was completed in 2010. Subsequently, verification and evaluation are to be conducted on three methods: "Quick piping (utilizing street gutters)"; "Prefabricate small-scaled bioreactor (PMBR)"; and "Prefabricate small-scaled bioreactor (biological contact aeration process and PMBR)."

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Key words

Quick Project for Prompt Sewerage Development, Innovative sewerage development methods, social experiment