

Urban Development Issues Related to Water Supply and Wastewater Disposal

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1. Adopting water supply and outdoor water drain systems in the RA construction rules and regulations
(1984's rules are working).

2. Serious approaches to water supply, as well as wastewater disposal and treatment systems when master planning residential areas

3. Unforeseen changes in master plans, especially in central districts of towns entail in unplanned load increase in W&W systems. This will cause serious problems in water supply and wastewater discharge processes.
4. Adopting and maintaining approaches and solutions for switch or gravity feed rainwater harvesting systems.

5. Constructing new residential districts in suburbs without water supply and wastewater disposal solutions.

6. In line with the process of constructing and commissioning sewage treatment plants and industrial development, great importance is attached to clarifying and regulating the requirements and conditions for discharging industrial wastewater into municipal sewage system.

7. Envisage making wastewater treatment plants and public toilets compulsory for tourist attractions, car wash and filling stations, as well as catering and recreational facilities in close proximity to highways.

8. Personnel training, retraining and household management improvement.

Applying Innovative Technologies in Parakar Community for Domestic Wastewater Treatment



The population of the village is around 10000.

It is almost fully sewerred.

Yerevan Jur CJSC provides water supply services.

Wastewater is of domestic nature. During Soviet years the village wastewater was pumped to Aeratsia wastewater treatment plant in Yerevan by a two-stage pumping station.

In 1990s the pump was stopped due to energy and economic crisis.

Wastewater had been removed by wastewater disposal system up to pump station standing idle in the village centre, afterwards it was discharged into the open irrigation canal passing nearby the village pump station (through school yard and residents' farmlands).

Over years the irrigation canal had been almost fully filled with wastewater sediments, so, wastewater often flowed out the canal to adjacent areas causing stink and insanitary condition.

The greater part of agricultural lands had been degraded, and it negatively affected the qualitative indicators of lands.

The situation before building the treatment plant



In order to improve the sanitary condition of Parakar community, as well as to rehabilitate degraded land areas, CWP, in cooperation with JINJ LLC, developed a Pilot Project on Domestic Wastewater Treatment Plant recommended by the village community.

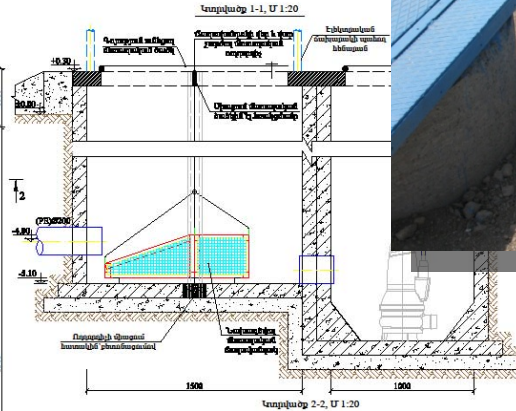
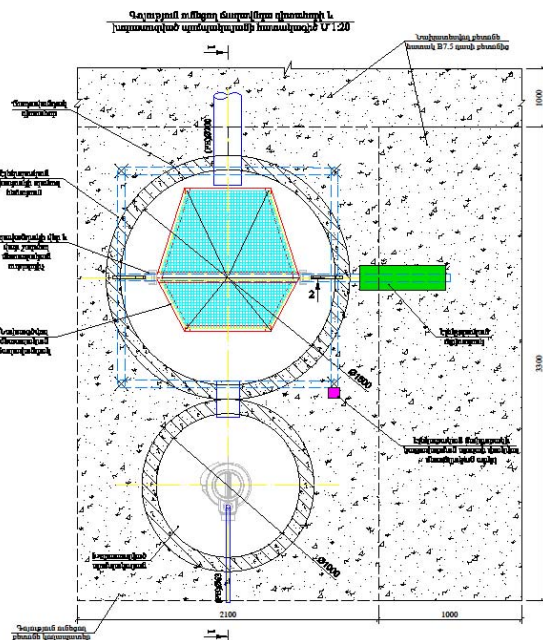
Due to anticipated scarce financial resources, the project was initially divided into two stages.

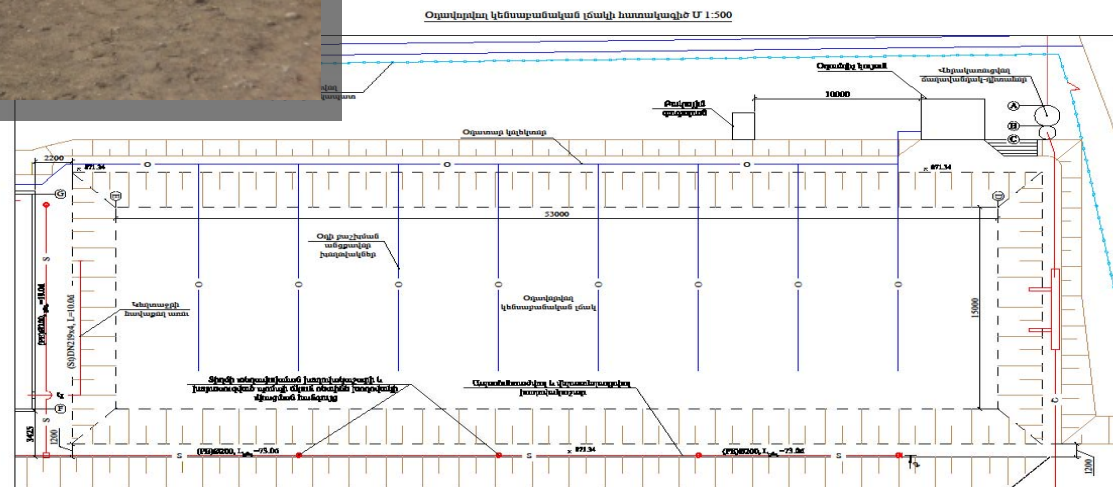
The first stage was implemented by the financial support from GEF-SGP.

In 2012 a lagoon-type of domestic wastewater treatment system was constructed and commissioned in Parakar.

The UK Department for International Development funded the second stage of the project implementation.

Screen well

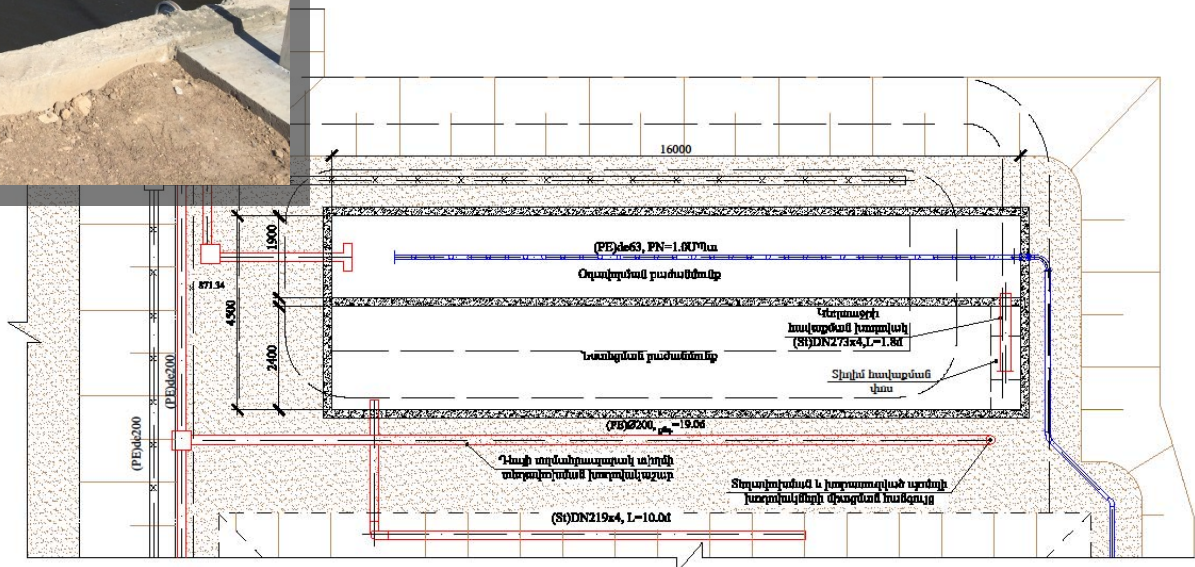


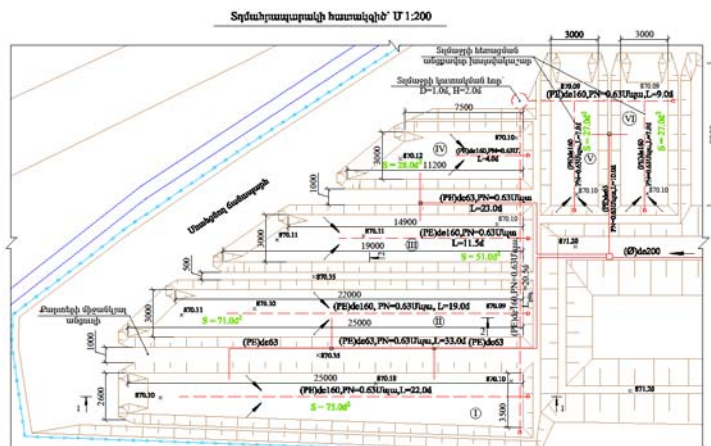




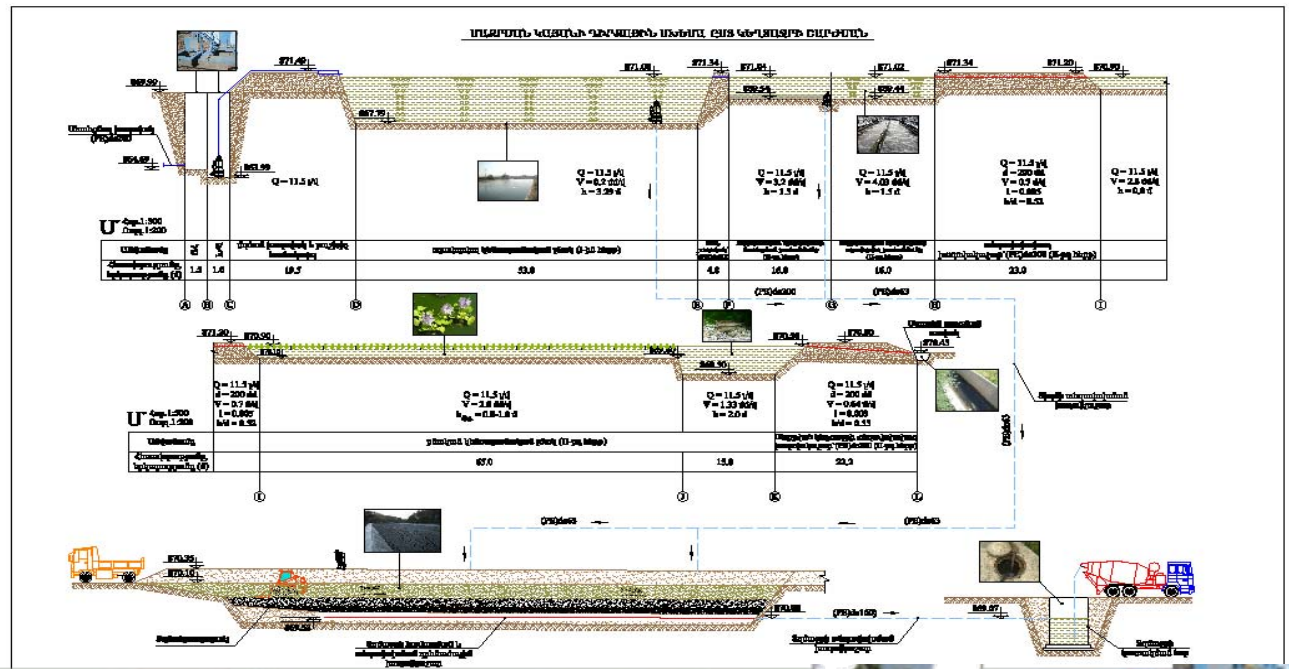
Horizontal settling basin

Հորիզոնական սկսքգարտանի տեխնոլոգիական հաստատագիծ Մ 1:100





The cheme of treatment plant



BOD of wastewater in accordance with technological structures

November, 2012

(In the 3d month after commissioning the treatment plant)

In the oxidation pond influent: 320mg/l

In the oxidation pond effluent: 120mg/l

At the point where it flows to irrigation canal: 80mg/l.

Benefits:

Wastewater BOD reduction from 300 till 35-40mg/l.

Restoration of degraded arable lands.

Improvement of the community sanitary conditions.

10 l/sec. additional amount of cheap water suitable for irrigation purposes (around 7,2 ha expansion of agricultural lands),

Utilization of the sludge dried in sludge beds as a cheap and quality fertilizer.

Institutional development of the community-based organization controlling the treatment plant.



THANK YOU