

## CSORNA, HUNGARY

**Client:** Mestermernok

**Country:** Hungary

**Length of Pipe:** 34km

**No. of Valves:** 420

**Volume of Flow:** 24 litres/second

**Specialist Feature:** Flat terrain and high water table



The village of Csorna is situated some 150km north of Budapest and 30 km east of the nearest town, Gyor. The landscape in and around Csorna is flat with a high water table making a vacuum sewerage system an obvious choice due to the ground conditions. The system was installed during 1997 by Hungarian civil contractor Mestermernok. The day to day running of the vacuum system is the responsibility of the local water company operating from a nearby sewage treatment works.

A computer link between the vacuum station and treatment works enables the maintenance crew to monitor and control the vacuum system's operation from their control room at the treatment works. Mestermernok have installed equipment to the main control panel which allows the PLC logic to be reprogrammed from the town of Gyor via use of a telephone/modem link. The Csorna vacuum system is very efficient and economical to operate with an electricity consumption of less than 0.5kwh per cubic metre of sewage collected.



# CSORNA

## Vacuum Pipework

There are some 34km of vacuum sewers in PN10 polyethylene pipe from Ø90mm to Ø160mm with electro fusion joints laid at an average depth of 1.2m.

## Vacuum Station Equipment

22m<sup>3</sup> steel horizontal vacuum vessel.

Three Nash SC4 liquid ring vacuum pumps each producing some 700m<sup>3</sup>/hr. The vacuum pumps operate on a duty/assist/assist basis.

Two dry well discharge pumps operating on a duty/ standby basis each with a capacity of 24l/s.

Control panel with programmable PLC which controls all pump operations and automatic recovery systems to assist with the efficient running of the vacuum system.

## Valve Chambers

The valve chambers (designed by civil contractor Mestermernok) were constructed from pre-cast concrete rings complete with conical base unit and intermediate landing platform. 420 chambers have been installed to date serving some 1100 houses making the vacuum system one of the largest in Europe.

## Summary

The village combines difficult geographical conditions - flat land with a high water table and covering many square kilometres. Many conventional gravity pumping stations would have been required whereas only one vacuum station was needed allowing minimal disruption to the village and providing the most cost effective solution.



Liquid Ring Vacuum Pumps



Valve Chamber Inspection

## Applications for Iseki Redivac's Technology

- Rural community sewerage systems
- Industrial developments
- Supply bases
- Housing development/compounds
- Hazardous waste collection
- Airports & military installations
- Beach developments
- Remote villages