

JOB No. CE-5415 (RG- 261)

# VETTING OF HYDARULIC DESIGN OF HAROULIPUR SURFACE WATER SUPPLY SCHEME

FOR  
**PNC-SPML JV**  
PNC Tower, 3/22-D, Civil lines, Bypass Road, NH-2  
Agra, Uttar Pradesh 282002



DEPARTMENT OF CIVIL ENGINEERING  
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NAGPUR 440 010

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## INTRODUCTION

Harolipur Surface Water Supply Scheme consists of Intake well, water treatment plant, raw and clear water pumps and pumping mains, Clearwater and Elevated Service reservoirs, water distribution networks with its components. The scheme was submitted to VNIT for vetting of hydraulic and structural designs of various components. This report is on vetting of hydraulic designs of various components as submitted by the M/s PNC-SPML, Agra is as below:

## REPORT

The design reports were submitted in three volumes: (1) DPR; (2) Hydraulic Statements; and (3) Distribution network designs. Further there were two volumes of drawings of water distribution networks.

Hazen-Williams formula as in CPHEEO Manual is used for head loss calculation using WaterGEMS.

To include minor losses in pipeline system as 10% of frictional losses the network was checked with lower values of roughness coefficient. The network as designed meets the criteria of minimum residual pressure at all the nodes.

Clear water reservoirs (CWR) are provided in the system. Water from these CWRs are proposed to be pumped at different ESRs. Pump house is proposed to be constructed over it to house pumping machinery. Usually, sumps/CWWRs are provided to have a capacity of 2 hrs of daily requirements for ease in operation considering uncertainty in power and therefore on schedule of pumping. The capacity may be reduced suitably in case additional capacity in the form of ESR. However, in this case, a minimum of 1 hr capacity is recommended.

Report signed by the coordinator are returned.



Dr. Rajesh Gupta  
Coordinator



Dr. Y. B. Katpatal  
Head of the Department



Dr. (Mrs.) M A Chaudhari  
Dean (R & C)

Note: This report is based on the design provided to VNIT by M/s PNC-SPML JV in the hard and soft forms of the report. However, this vetting report does not absolve original designer, consultant and the Contractor of their responsibility. VNIT would not be responsible for any loss due to incorrectness of data and conditions beyond the control of VNIT such as improper execution.