Pilot Trial of Piped Water to Kaza, HP in Winter

Implementation Details

Background

A pilot trial implementation of piped water to Kaza homes in winter has been approved by Dr. Ramlal Markanda, Hon'ble Technical Education Minister, Himachal Pradesh.

Goals & Objective of the Pilot Trial

- To supply during the winter months, from November 2021 till March 2022, a fixed amount of water per day to the Hospital and Girls' Hostel in Kaza.
- To ensure that the process of water distribution, pipe drainage, pipe de-coupling & coupling is established and followed for the duration of the trial.
- To document the process and use the learning, for the implementation of the overall full & complete project of getting water to Kaza homes, hospitals, schools, hotels & homestays and other establishments in winter.

Pilot Trial Implementation Details

(*Please refer to the **Pilot Trial Schematic Drawing** and to the "**Source 2**" section below for further details & illustration*)

As per the fact-finding done by JSV and local leadership, the implementation will be as follows:

- The Langza source will be used for running the pilot trial.
- From the original, natural Langza source, (Source 1) new HDPE pipes will be used which will be placed 5 feet underground throughout till the current collection point.
- At a point, before the Hospital & Girls' Hostel, an underground insulated valve box will be made to house the decoupling & coupling stem valves (to be called Source 2).
- The pilot trial of the pre-insulated pipes (PIPs) and the distribution & draining process will start from this Source 2.
- From Source 2 PIPs will be laid to the hospital & the Girls' Hostel at a depth of 3-5 feet and the drainage valves will be placed at the lowest point in the pipe sections ("master drain") and these will be insulated and/or not exposed.
- To not disturb the current collection point, the following procedure will be followed at Source 2:

- The underground insulated box will house the decoupling & coupling mechanism, to open & close the valves for the PIPs and the HDPE pipes.
- The HDPE pipe coming from the Langza source will be the inlet while the outlet will be 2 pipes, the regular HDPE pipe and the PIP going to the hospital & girls' hostel.
- At a fixed time of the day, water will be supplied to the Hospital & Girls' Hostel, so at this time of the day, in the insulated box, the stem valve for the regular HDPE pipes will be closed and the one for PIPs will be opened.
- Once the fixed amount of water has been supplied the stem valve for the PIPs will be closed and the one for regular HDPE pipe will be opened back so that water will again flow to the current collection point.
- So during the time when water is supplied to the hospital & girls' hostel, there will be no water at the current collection point (which the residents will be told in advance) but it will be restored after the designated time when the PIP will be de-coupled.

- After the daily water has been supplied to the hospital & girls' hostel, PIPs and service line will be fully drained using the drain valves at the lowest point of the PIPs using the taps/valves placed at the end point so that there is no residual water in the pipelines that can freeze and damage the pipes.
- Opening and closing of the valves at Source 2 and the draining of the pipe & service lines, to keep the PIPs free from water and prevent it from freezing, will be done by designated personnel before and after the daily supply.
- At any exposed drainage points, a cement structure will be made to enable the drained water to flow into a soak pit/container to prevent ice formation.

Source 2 – Coupling & Decoupling Valve Details:

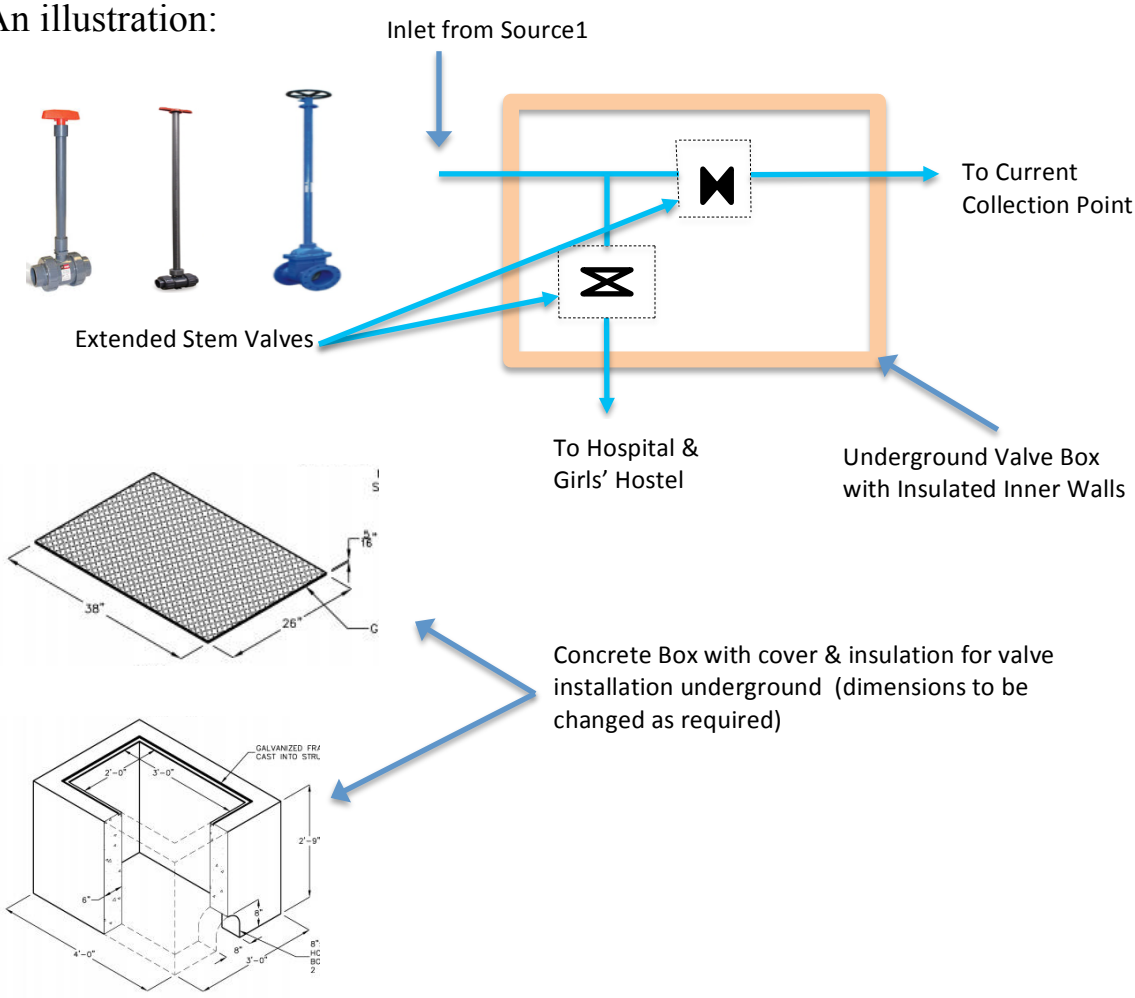
Coupling/Decoupling and Drain points are the most vulnerable sections of the distribution-piping network. These points need to be accessed from above ground in order to operate the valves and therefore will be exposed to extreme cold weather. These sections thus require heavy insulation to protect valves from freezing and we should be able to operate them daily at the same time. Extended stem ball valves are to be used, so that they are well protected and insulated and can be operated using long stem.

The valves, underground insulated box are illustrated below. Since, water is gravity fed, the flow does not create high differential pressure and so gate or

globe valve can also be used, instead of ball valve if extended stem is more readily available in the latter types.

Please note that if from Source 2 till the Hospital and the Girls' Hostel is fully downhill then the lowest point ("master drain") will be inside the respective buildings and so will be insulated. This is where a full-bore valve will be used to drain the water fully from the PIPs after the daily quota of water has been collected and the PIPs have been decoupled at Source 2.

An illustration:



Implementation Steps

- The core team formed with representation from JSV, Government officials, Resident & Business community leaders, will decide on the point called as Source 2 and will also monitor the digging, construction and installation as required for the implementation of the pilot trial.

- The core team will sign off on the pilot trial documents, namely, Pilot Trial Implementation Guideline, Pilot Trial Implementation details and the Pilot Trial Implementation Schematic Drawing.
- Ensure the vendor company has understood the proposal & details and the timeline and is ready to implement.
- Implement Pilot trial, by November, 2021.

Implementation Schedule

Activities	Date	Responsibility
Form the core team	September, 2021	Engg. Grp, Proposer, Jalshakti & KRBC
Plan implementation and align with vendor company	September, 2021	Engg. Grp, Proposer, Jalshakti & KRBC
Start Implementation of Pilot Trial	October, 2021	Engg. Grp, Proposer, Jalshakti & KRBC
Complete Implementation of Pilot Trial	November, 2021	Engg. Grp, Proposer, Jalshakti & KRBC

Key Personnel For The Implementation of the Pilot Trial (Proposed)

Jalshakti Vibhag, Kaza

- Shri. Manoj Negi, Executive Engineer, Jalshakti Vibhag, Kaza.
- Shri. Budhi Chand, Assistant Engineer, Jalshakti Vibhag, Kaza.
- (Further names may be added)

Kaza Residents & Business Community (KRBC)

- Shri. Lotey Bodh – Up-Pradhan GP Kaza
- Shri. Tsering Bodh – President, Hoteliers Association
- Shri. Sonam Targay – President, Homestay Association
- Shri. Sonam Angdui - JE HPPWD
- Shri. Cherring Dakpa - Homestay owner

Spiti/Himachal Pradesh Government Officials

- Dr. Ramlal Markanda, Hon'ble Technical Education Minister, HP.
- Shri. Mohan Datt Sharma, ADC, Kaza.
- Shri. Mahender Pratap Singh, SDO (Civil), Kaza.
- (Further names may be added)

Engineers' Group/Advisors and Proposer

- Shri. Satyajit Kar Ray
- Shri. Atonu Das