



REPORT ON ALTERNATIVE STUDIES FOR PIPELINE ALIGNMENT

1.00 Introduction

1.01 Project

1.01.1 Chachadi lift irrigation scheme is proposed to irrigate 2718 Ha of land in Gokak, Bailhongal and Saudatti taluks of Belagavi district by lifting the required quantity of water from Markandeya right bank canal at Ch: 33.650 Km near Midakanatti village in Gokak taluk.

1.01.2 The first package of the project involving the construction of approach canal, pump house with pumping machinery etc., rising main, delivery chamber and 5 km of feeder canal.

1.02 The Proposal

1.02.1 The study is strictly restricted to the replacement of open canal with pipeline for 0-3km and the design and other aspects of the RM and DC have been considered as it is.

1.02.2 The open canal has been replaced with MS Gravity main (GM) of 1.095mm diameter which will address the concerns put forth by Forest department and should resolve a major roadblock in timely completion of the project.

1.02.3 The GM has been specifically designed to be buried about 1.00m from GL so that the surface, once reestablished, can support good shrub growth and gel well with the surroundings. Even though the land for the GM will be with KNNL, its footprint amidst forest would be lesser.

1.02.4 Two alternatives have been studied: Alt-1 considers an alignment keeping in mind the earlier envisaged FTL in the DC and Canal Bed Levels as per the approved cutoff statement which is a part of the original project concept. It shall be noted

that the intake point has to be retained as the same has been finalized as a part of the Markandeya Right Bank Canal Project approved by the state government. Alt-2 has been studied which considers the alignment of the pipeline near the edge of the RF boundary.

- 1.02.5 The location of the DC, even though not implemented yet, is most suited from technocommercial aspects due to reduced excavation quantities and consequent reduction in concrete quantities saving precious natural resource. The location of the DC is hence retained.
- 1.02.6 The canal alignment has been particularly designed to reduce both excavation and embankment quantities but achieving the most important criteria of command area (around 2700 Ha.). The canal alignment for open canal reach has thus been retained as per the original proposal and the reach just beyond the forest boundary is already implemented for a length of 2km. This essentially means that the alternative studies are only for the alignment between the Proposed DC and the canal alignment beyond the forest boundary. The same is shown in Drg. No.: BHEC/KNNL/CLIS/FC/03 marked as ALT-1 and ALT-2.
- 1.02.7 The pipe invert level is 720.00 at the beginning and 719 at the end. The GL has been chosen so that the backfill depth from the top of pipe is at least 1.00m. The alignment has also considered 5 major nalla crossings along the alignment. The alignment passes between 720m and 740m contour.
- 1.02.8 ALT-2 passes through 700m contour which is about 20m below the earlier alternative. As already outlined, the starting and the end point being fixed would essentially mean that the revised alignment would involve sudden drop in the pipe centerline from 720.0 m at DC and also EL. 719.00 at the end point. The sudden drop in elevation would involve substantial excavation quantities disturbing huge quantities of soil in the forest area. The nala bed levels would also be deeper along this alignment requiring more expensive cross drainage works.

- 1.02.9 Considering the advantages and disadvantages of both alternatives, ALT-1 is recommended for implementation due to reasons mentioned above.
- 1.02.10 The revised proposal for the same extent of forest land is thus prepared and submitted for speedy approval.


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