

# DUCK IRRIGATION SCHEME – PIPELINE STATION & Ancillary Works

Date: May 2017 to Aug 2018

Principal: Tasmanian Irrigation

Project Value: \$9.9M

## TASK

Design and construction of an irrigation scheme for use by 30 farmers in the Circular Head region of North West Tasmania. This included 60km of Poly Pipe ranging in size from 110mm to 800mm, two pump stations and two 500kL balance tanks.

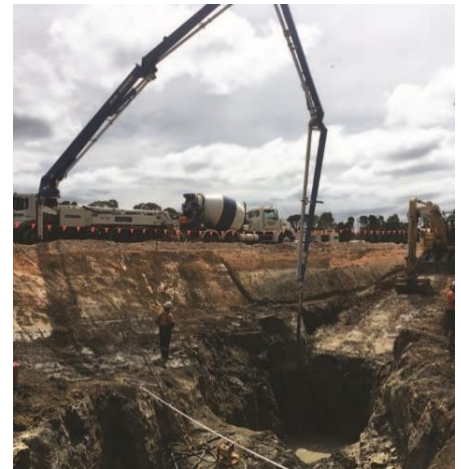
The Duck Irrigation Scheme comprises two pump stations; the Edith Creek Pump Station and Smithton Pump Station. The Edith Creek Pump station is a dual purpose station situated 15km south of Smithton, it captures winter flows from the Duck River to fill the Mill Creek Dam, and releases the irrigation water back into the Duck River during summer. The Smithton Pump station, located near the township, receives the irrigation water and transfers it along the two, more than 20km reticulation networks towards Forest and Mella areas.

## CHALLENGES

The pipeline crossed over more than 50 different farms and required negotiating with many farmers with many different farm practices. The project required working around cropping times and cattle movements, detailed washdown and disinfection procedures, tight environmental constraints and a vast working area - from end to end the pipeline was 40km long.

Many locations within the construction zone were through sensitive areas and required directional drilling of pipework, these included major river crossings, road crossings and crossing strategic drainage covered by the Mowbray Drainage trust. The Duck River crossing was completed using horizontal directional drilling and was a 120m path with a 10m incline through rock boring a 600mm hole. At the Edith Creek crossing a 355mm pipe was installed through rock 80m long.

Other environmental factors that were encountered included the western end of the pipeline which was constructed through a low-lying area that was suspected of being in acid sulphate soils. When exposed to oxygen acid sulphate soils can contaminate farm lands if not handled properly. For over 20km of pipe line the acid sulphate soils were managed with lime dosing and had no reported incidents of contaminations.



## CHALLENGES Cont'd ...

The Duck Irrigation Scheme was the first scheme to include the installation of fibre optic the length of the scheme. This allows instantaneous management of flows and highly accurate tracking for water management. The fibre optic was installed in continuous lengths of up to 2km.

The majority of the works were completed through the summer of 2017/2018 with over 50 employees working to avoid the poor Circular Head winter weather conditions.

## OUTCOMES

The pump stations were completed in time to collect the winter rains from Edith Creek to begin filling the Mill Creek Dam. The Duck Irrigation Scheme was completed and in use for the 2018-2019 summer. This allowed farmers to utilize their purchased water for cropping and cattle irrigation.

