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TIPON – A TESTAMENT TO INCAN WATER MANAGEMENT

BY MIKE APPLGATE

Tipon is an ancient Incan water temple that has outstanding examples of the hydraulic engineering capabilities of the Incan empire. It is a good place for engineers to visit to remind us of the importance of water to society both then and now.

I recently made a trip to visit Peru for the XXVII Latin American Conference on Hydraulics. This also gave an opportunity to see some of the structures of the Incan Empire and learn more about the history of specific sites. One of the sites called Tipon and is located near Cusco, Peru. Tipon is a sacred water temple built by the Incan Empire in the 15th century. It is in remarkably good condition and is a testament to the ingenuity the Incan people had in water management and hydraulic design.



Figure 1. Tipon Water Channel and Drops

The hydraulic performance of the water features are impressive. The open channels, drops, energy dissipation structures and fountains are well designed and continue to function even after centuries of use. Tipon also represents the social significance that water was viewed by this empire. The architectural layout of the walls and terraces seamlessly incorporated the hydraulics of the water features. It is breathtakingly beautiful.

Water was the foundation of the Incan agrarian culture. But the Incans apparently also placed huge societal value on other aspects of water. The sight and sound of the water flowing through the various features in Tipon makes this ancient temple have a very connected and spiritual feeling to nature and the earth. I had the good fortune of visiting the site in early morning when very few people were there. The quiet peaceful background sound of bubbling and splashing water was very soothing. The visual beauty of the water drops and fountains still performing after centuries of use was stunning. The panoramic view of the valley below added to the experience. I could understand why the Incas considered this a sacred ground.

When the Incan Empire was invaded by the Spaniards, portions of this site were buried by the Incas and many artifacts such as ritual water pots were destroyed to keep what they considered sacred to their people out of the hands of the invaders. I was told that there was little silver or gold found at Tipon, so the Spanish quickly lost interest in it and moved on. Recent restoration work has slowly uncovered additional hidden water features and secrets of Tipon. The archaeological discoveries continue to reveal the ingenuity of these ancient hydraulic engineers.



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resources working with clients in the power industry, agriculture, mining and government. This includes water resources planning, water rights evaluations, river basin modeling, infrastructure design and construction management. Mike has served on the Board of Directors of the Northern Colorado Water Conservancy District since 1991 by judicial court appointment. His duties at Northern Water as President and Chairman include guiding policy for operation and management of the largest trans-basin water project in Colorado.

There have been many other investigations of Tipon that are far more detailed and better technical reviews than this article. The durability and simplicity of their ancient design speaks to us as engineers. The fact that all this was accomplished without the technical tools we as engineers currently have at our fingertips is all the more reason to admire this accomplishment. The observation I have as a professional engineer and someone who has worked in water for many years is that we sometimes need to step back from our day-to-day work which involves the technical aspects of water. Tipon amplifies the emotional, spiritual and social aspects of water that touches everyone. We as water professionals need to keep an appreciation for a life giving resource that transcends hydraulic formulae and theory. ■