

## Saudi Arabia's National Water Company Increases Water Storage

In 2012 the National Water Company (NWC) of Saudi Arabia undertook the enormous project of developing 43 wells and 46 water purification stations in 27 separate locations to provide sustainable potable water systems near Riyadh. To accomplish this task in a short six-month timeframe, contractors around the world were brought in to provide the necessary pieces of infrastructure required to build the system. Much of the manufacturing and pre-fabrication took place at factories around the world, before infrastructure pieces were shipped via hundreds of cargo ships and trucks to Saudi Arabia for installation.



***Tanks identical in size storing 5,000 cubic meters with dimensions of 31.5m diameter and 6.9m height.***

At each of the 43 developed well sites, drills bore down up to 2000m to sub ground water, pumped it to the surface, cooled it through cooling towers, then treated it through reverse osmosis desalination plants before storing the potable water in tanks and distributing it through the existing water network. Significant amounts of storage were required for the drilled and treated potable water created.

Selected to provide durable storage tanks, CST Storage provided 17 Aquastore glass-fused-to-steel coated modular tanks from its DeKalb, Illinois facility. In addition, CST Covers in Rincon and Conroe, Texas, manufactured 17 aluminium geodesic domes to cover the tanks. The CST Storage tanks were identical in size, storing 5,000 cubic metres with dimensions of 31.5m diameter and 6.9m height.

CST manufactured all 17 tanks and domes in a short six-week timespan beginning from the approval of the drawings. The shipment of all the pieces via containers took just five weeks from the U.S.A. to Jeddah Port, Saudi Arabia.

Saudi contractors, SSEM and NESMA, oversaw the acquisition and installation of the storage tanks and covers for the National Water Company. CST provided six full-time supervisors from Canada, U.S.A., Nigeria and the U.K. to direct labour and construction crews in sometimes remote locations under difficult site conditions in order to complete the simultaneous construction of the 17 storage tanks and covers.

Crews worked onsite up to 16 hours per day and construction of the tanks and covers was completed within 60 days of the material arriving on site. The complexity of one very large site featuring nine tanks was a particularly challenging environment with many disciplines working around each other to finalise the project on time, in an exposed location facing many Saudi Arabian sand storms.

Once construction was completed, water fill tests were performed on all the CST tanks and covers. Today, all sites are operational and the CST Storage tanks and CST Covers domes provide secure storage.

*"The CST Storage tanks and CST Covers domes performed excellently to the standards we required, and we have been delighted with their products and level of service provided. They helped us accomplish our goal to deliver high quality and sustainable potable water systems to our customers, and we would definitely utilize their glass-fused-to-steel tanks and aluminium domes again," said a senior NWC official.*



### Benefits of CST's Aquastore® glass-fused-to-steel tanks:

- No painting for life of tank
- Will not corrode or rust
- Lowest total life cycle cost compared to concrete & welded
- Turnkey services from approval drawings to tank testing
- Faster construction
- No need for cranes or other large equipment for construction
- Expandable
- Interior & exterior easily cleaned
- Tank can be easily relocated
- Available in diameters from 11 feet (3.3 m) to 204 feet (62.2 m) and capacity from 20,000 gallons (75 cu m) to over 6 million gallons (22,700 cu m)
- Specific tank designs, options and accessories to meet customer needs
- Industry best warranty
- White interior coating
- Multiple color options
- Authorized network of local Aquastore Dealers for convenient service and support

OptiDome® geodesic aluminium domes are the preferred cover solution for any storage application. Aluminum dome structures are superior to other cover designs of alternate materials due to: corrosion resistance, low lifetime maintenance cost, clear-span capability, fast and low cost construction and design flexibility.

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