

**Title :** Providing sustainable fresh water sources by unlocking Water Veins - Jala Nadi

**Current Stage of the Technology :** Technology Commercialized/ Implemented

**Estimated Capital Cost,If Quoted (In Rs):** 170000000.00

**Cost of Water Per Litre (Paise per liter):** 2.00

**Patent filed :** No

**Patent Application Number :** --

**Patent granted :** No

**Patent Number :** --

**Provide Video Link :** <https://www.youtube.com/watch?v=YSXCntQO8JY>

**Key Word :** --

**Summary of the Product :** WaterQuest is a solution provider to meet the growing water demands of our ecosystem by creating an alternate source of water, which is decentralized, sustainable, perennial, self-recharging and self-replenishing for drought prone, water stressed and ground water contaminated regions. Its a proprietary Artificial Intelligence based virtual water prospecting program deployed to locate naturally desalinated fresh water sources typically between the depths of 300 – 800m. The program is fine-tuned to identify high volume of water sources ranging from 50,000 l/h to 250,000 l/h depending upon location. To locate such subterranean rivers, our team has curated one of the most extensive hydrological databases – Geophysical data (~1kms depth) from Oil & Mining companies. Our AI looks for amongst other markers, disruption of electromagnetic fields in the local geology indicating presence of flowing (not static) fresh water. Our water finding experts have fine-tuned the program to prospect for high volume of water with 98% accuracy in locating these sources at a given target location and 92% accuracy of predicting the flow rate of water, enabling us to minimize the costs and time involved to provide water to our clients. This water, which is tapped, is independent of rainwater and groundwater table. The Success of the solution depends on the below 3 Key Pillars: 1)Extensive Proprietary Global Hydrogeological Database 2)AI Driven Virtual Prospecting Technology 3)Eco-conscious Drilling Process

**Contaminants that can be removed through this Technology :** WaterQuest's proprietary technology creates alternate, sustainable and self-replenishing sources of water instead of relying on the purification of existing water sources. However, the water thus produced is subject to pre and post treatments to remove any dissolve solids in the water. We carry out eco-conscious air compression drilling to reach the targeted depth of discovery and completely cement and case the well to prevent any contamination to the water source from any ambient aquifer sys

**Design Capacity :** The flow rate of the water varies from presence of water veins at a specific Target Location. Design capacity ranges between 100,000 liters/hour to around 250,000 liters/hour. A single source can develop approx. 2-3 MLD of fresh water.

**Pre-Treatment Protocol :** Virtual Prospecting Study oPreliminary assessment begins with study of satellite maps of the target location provided by the beneficiary. Studying these maps provide some evidences that help the team to define the "route" of the underground rivers. In case of positive lead, geological maps are further studied to get a clear picture. oOur proprietary program is an assimilation of various hydrogeological maps, global geophysical data from oil/mineral exploration studies, remote sensing data including Thermal Data, Gravitational Field Data, Magnetic Field data of several years and related data. oOther parameters are determined like

depth, flow, water quality, temperature and etc. from the preliminary studies. It is mandatory for experts to conduct field study for detailed inspection of the site before beginning the drilling of borehole and assessment of the existing installations.

**Post-Treatment Protocol :** Site Preparation It is necessary to have a site free of obstacles and perform an investigation to identify potential underground services that could have impact on the progress of the project before the drilling process. Casing o Depending on the results obtained during the research, well characteristics will be determined such as sort of casing pipe, slots, gravel filters, sealing, etc. Cleaning & Gauging o Once the pipe has been placed into the borehole, the well is cleaned and gauged. Both steps (sort and duration) are performed according to well characteristics. Pumping Test o To determine the optimal exploitation flow and/or aquifers hydrogeological characteristics a pumping test will be performed, controlling water flow and level by a submersible pump and a sounding line.

**Operations and Maintenance Cost and Protocol :** Our Virtual Prospecting Artificial Intelligence based program has been fine-tuned to prospect for high volume underground subterranean river sources within couple of weeks for a target location. We only need 1000 sq. yards of land to enable accessing with the help of of start of the art drilling equipments. Our team of experts are trained to prospect and drill the well and simultaneously capping and cementing of wells to prevent any contamination of surrounding underground water aquifers. Once the Source is accessed, to ensure adequate quantity of water is extracted - pump sets are installed.

**Reject Management Cost and Protocol :** WaterQuest's technology enables access to Naturally Desalinated, high volume fresh water sources. Since we do not use any Thermal or Membrane Filtration mechanism like in desalination plants to produce fresh water sources, hence Reject Management Costs and Protocols is not applicable to us. In any case where our extracted water requires any treatment and the corresponding reject management required shall be complied with any and all prevailing procedures as necessitated by technology used for the treatment.

**Certification of Product :** 1.SIIF (Seoul International Invention Fair) 2015, Gold Prize Winner  
2.Top 3 finalist of Global Grand Challenge awards in Water Category @ Singularity University Global Summit 2016, San Francisco  
3.First Prize at National Summit on Innovation and Technology (NSIT), on sidelines of Vibrant Gujarat Summit, 2016, India. 4.Finalist at Best Start up of the Year – ICT category – GESIA (ICT arm of Gujarat Government), powered by NASSCOM

**Ease of Operations and Management :** Once the Source is accessed pump sets are installed. Only 50 units of power is needed to meet desired quantity of water per hour.

**Interference by other Contaminants :** The cementing of well during the drilling is critical to prevent the contamination of ground water and hence no or less water treatment costs. The cement sheath provides hydraulic seal that establishes zonal isolation, preventing fluid contact between producing zones in the borehole and blocking the escape of the fluids to the surface. This sheath also anchors and supports the casing string and protects the steel casing against corrosion by formation fluids.

**Test Trailed : Whether Test Trailed/Implemented :** The technology has been successfully implemented in West Europe (Spain, France, and Portugal), South America, North America, Middle East thereby positively impacting several water stressed locations. The first source was

developed at Barcelona in 1977 with an output of 60,000L/Hr. This well is operational with same operational parameters. Over 1200 sources have been developed so far.

**Competitors :** . Interlinking the rivers of the country. However, this process is costly, time consuming and has adverse environment impact to ecosystem. ii. Desalination process, again is time consuming, expensive & suffers from high environmental impact. iii. Canals & Pipeline Projects The long transmission route of water pipelines causes – leakages, pilferage and water thefts, leading to increase in non-revenue water losses.

**About Innovator and Contributors :** Mr. Akash Bhavsar, Co-founder & Director, in-charge of Project & Business Development. He has 14+ years of experience in Technology Management & International Business Development working as the Co-founder & MD of SkyQuest Technology Group; Chairperson of Innovation & Competitiveness Task Force of UN ESCAP amongst some other designations. Ms. Shriya Damani, Co-founder & Director with over 12+ years of experience has gained expertise & experience in IP Strategy & Planning, Technology Management & Commercialization. She is also a member of Sustainable Business Network UNESCAP Mr. Lui Khang, Executive Director, a member of UN ESCAP Business Advisory Council (EBAC) has been engaged in multiple water related projects aimed at finding sustainable water sources in most of Asia, Australia and New Zealand. He is adept at forecasting models for financial markets using technical analysis and has 35+ years of experience in diverse sectors like exploration management, Software project management, web development, Risk management etc. He is responsible for planning, development, implementation and evaluation of projects, as well as to cultivate relationships with project stakeholders. Mr. Luis Castello Turell, Chief - Water Prospecting, An expert at Data Interpretation specializing in Hydrogeological data, Geophysical studies data, Gravitational data, data from Oil Exploration studies, Remote Sensing data etc. and has championed the process of detection of water veins, determining the parameters of the underground water detection with experience of over 16+ years and has overseen construction of 500+ wells across the globe. Mr. Jose Luis Castello de Moxo – Chief – Well Management, has over 40 years of cumulative experience in studying and identifying underground water recharges from the seabed. Till date he has experience of developing 1200 water wells and well management. Mr. Ketan Shah, Chief - Drilling Operations, with over 30+ years of experience as drilling expert. He has worked with ONGC (Oil Natural Gas Corporation), an Indian multinational oil & gas company and also different clients in India, Saudi Arabia, Oman, Algeria, Russia & Nigeria and has handled rotary drilling with high pressure, CBM wells with air drilling & off shore drilling.

**Contributors :**

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