FAST COMPANY
2017 MOST INNOVATIVE COMPANIES

WaterQuest Hydroresources

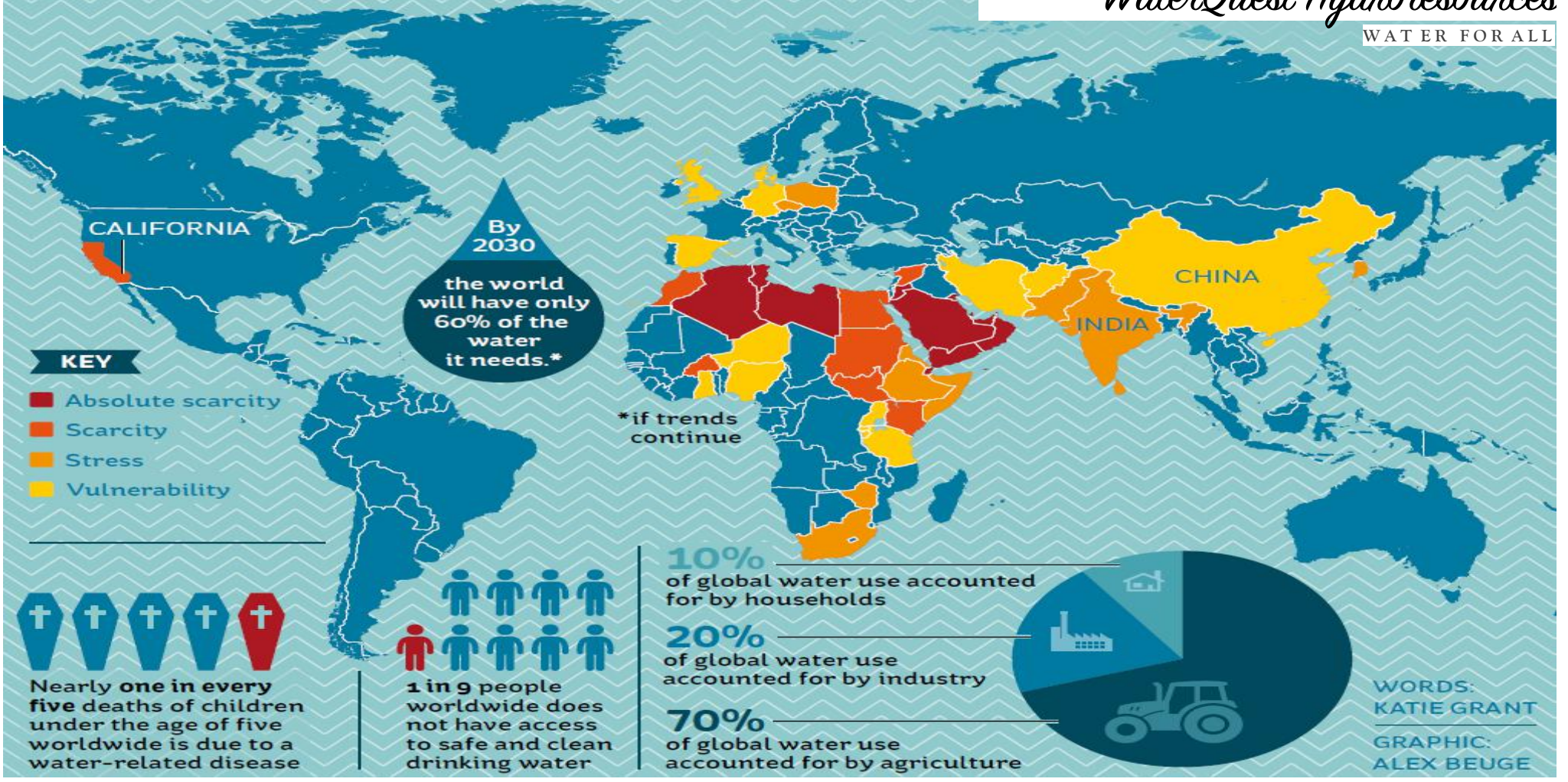
WATER FOR ALL

We never know the worth of water till the Well is dry.

- Gnomologia, 5451, published in 1732 AD

Thomas Fuller (Gnomologia), A British Physician, Writer & Intellectual, (1654 – 1734)

ENVIRONMENT
Liquid planet



Nearly **one in every five** deaths of children under the age of five worldwide is due to a water-related disease

1 in 9 people worldwide does not have access to safe and clean drinking water

10% of global water use accounted for by households

20% of global water use accounted for by industry

70% of global water use accounted for by agriculture

WORDS: KATIE GRANT

GRAPHIC: ALEX BEUGE

Current Alternatives for fresh water

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Current Alternatives	Challenges	Timeline	Per Capita Capital Cost
Canal / Pipeline Projects	High capital investment + Project Social Displacement + Environmental Clearance + Source of water not assured	At least 3-5 years	INR 10,000
Desalination	High Capex + Negative impact to Environment + High Operating costs	At least 2-4 years	INR 18,000
Cloud Seeding	Environment impact and unpredictability	2-6 Months	NA
Tankers	Small scale – unsustainable source dependent	~	NA

BY 2025,
1.8 BILLION PEOPLE
WILL BE LIVING IN
COUNTRIES OR
REGIONS WITH
ABSOLUTE
WATER SCARCITY

THE GLOBAL GOALS
For Sustainable Development

WaterQuest Hydroresources
WATER FOR ALL

"THE FUTURE
DEPENDS ON
WHAT WE DO IN
THE PRESENT."
- Mahatma Gandhi

About WaterQuest

WaterQuest Hydroresources
WATER FOR ALL

WaterQuest is a responsible organization focused on developing decentralized, perennial, climate resilient, sustainable water sources for drinking water, irrigation and industrial use by deploying its proprietary solution for discovering, accessing & managing self-recharging water veins/underground rivers

WaterQuest solution is a combination of 3 key Innovative components that enable us to access the water veins/underground rivers

1. Proprietary Global Hydrogeological Data sets
2. Artificial Intelligence driven Virtual Prospecting System
3. Eco-conscious Drilling Process

FAST COMPANY 2017 MOST INNOVATIVE COMPANIES

Actual Picture of Site @ Hatta Valley, UAE

About SELF-RECHARGING WATERVEINS

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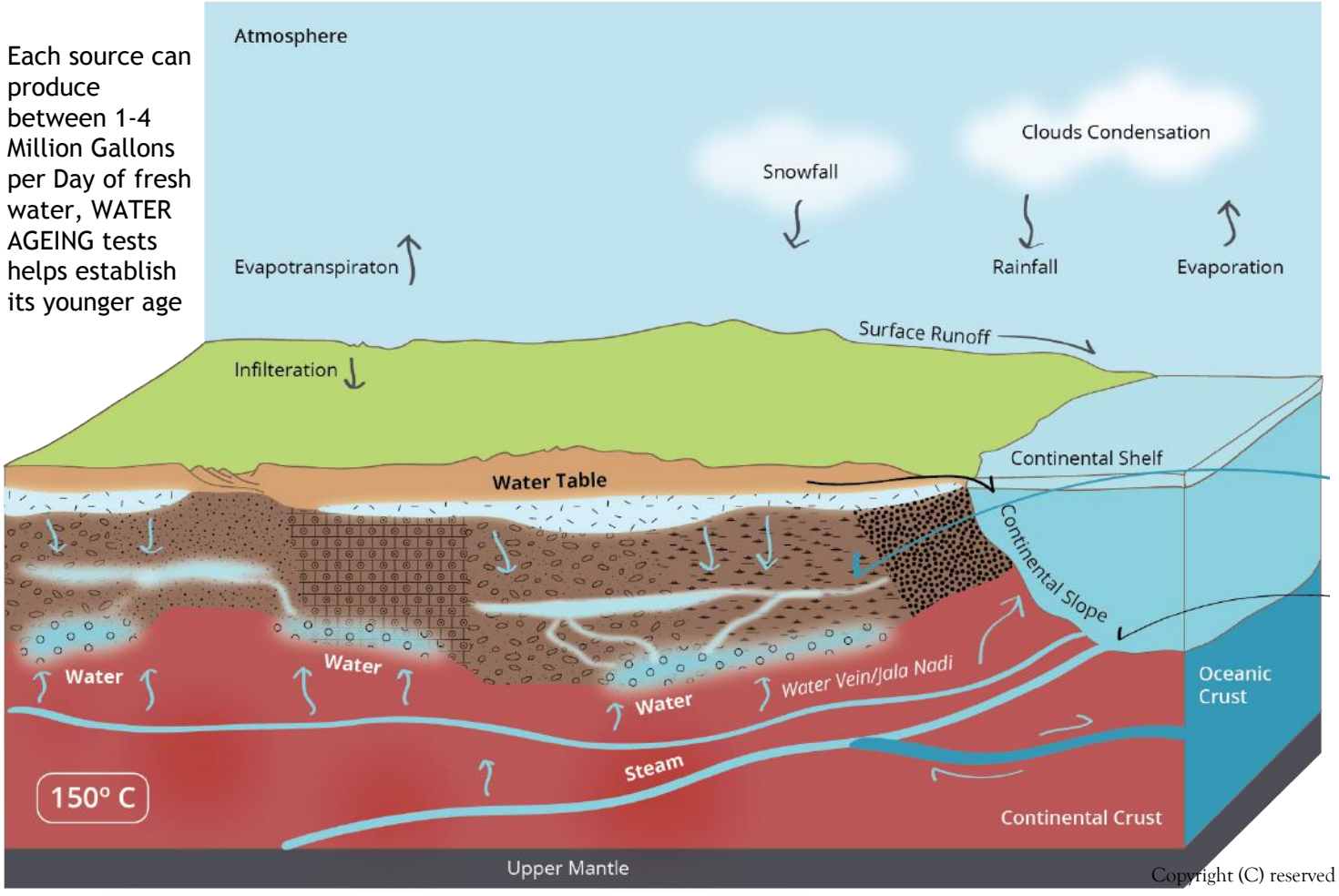
Each source can produce between 1-4 Million Gallons per Day of fresh water, WATER AGEING tests helps establish its younger age



Phreatic Groundwater

Seawater Distillate

Oceans cover almost 68% of the earth surface and the oceanic crust has fault-lines, fissures, fractures, through which the sea water naturally percolates to deeper recesses – where temperatures could range 500-800ºC –transforming sea water into steam using geothermal heat – the steam which is under very high pressure is able to rise to shallower zones and starts to condense into moving water sources - Water Veins or Underground Rivers. The nature of water veins flows is trans-continental.

These water veins are naturally desalinated, self-replenishing and self-recharging water sources typically found at the depth between **300-800 meters**, once extracted provides a perennial output without impacting underground water table.

Global Data sets

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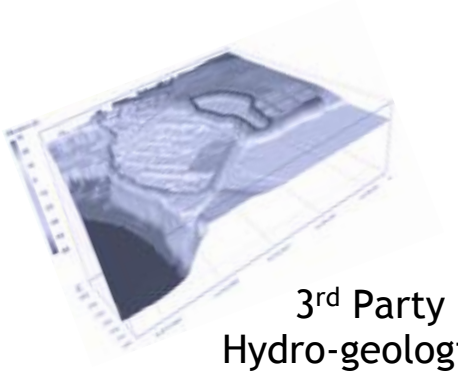


3rd Party
Hydro-geological
Studies

Global Satellite
Mapping Data

InSAR

Grace

Landsat

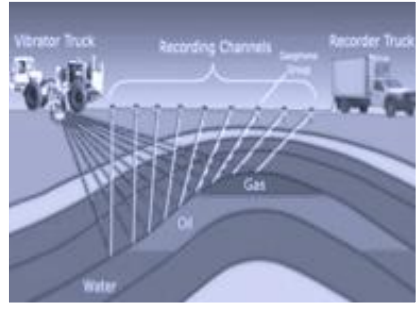
Sentinel

Modis

SRTM

One of the largest Private Hydro-geological Datasets

Mining & Mineral
Exploration Studies
Datasets



Oil & Gas
Prospecting Study
Datasets

Indicative List

Technology Overview – AI enabled Virtual Prospecting Program

(Simplified Pictorial representation of WaterQuest tech platform)

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Largest Pvt Global Multi-source Database

Combinatorial AI tech platform +
+ Eco-Conscious Drilling

1200+ water stressed regions benefitted

- Hydrogeology
- Seismic Data
- Magnetic Fields
- Satellite
- Microwaves
- Gravitational Fields
- Electric Fields

Ingest
+
Process & Normalise
+
Identify
+
Continual Learning

Proprietary Pattern Recognition Virtual Prospecting

Artificial Neural Networks (ANN)

Genetic-Algorithms (GA)

Support Vector Machine (SVM)

Bayesian Networks

Wavelet transform

Analysis on:

Porosity
Storativity
Electromagnetic
Field Disruptions
Transitivity
Fractures &
Discontinuities
Hydraulic
Conductivity &
Permeability

Map & Analyse Water Sources

Classify Water Quality & usage

Quantify

Beneficiaries

Agriculture, Water Boards, Public Water Utilities, Municipalities, Development Agencies

Private Sector & Collaborators

Largest pvt global multi-source database

Water Prospecting accuracy – 98%
Water Flow Prediction accuracy – 92%

Representation of AI based Virtual Prospecting Program

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Upon identification of water veins

Depth (M)	Flow Rate (Lit/Hr)	Static levels (M)	Temp ^{0}Cel	Quality

Output:

Water Veins Presence (Y/N)

Depth	-	400-580 Mtr
Static Level	-	38 Mtr
Flow Rate	-	150,000 LPH
Quality	-	Drinkable
Temperature	-	43^{0} C

Accuracy & Precision

98% - Water Finding

92% - Flow-rate Prediction

Eco-conscious Drilling Process

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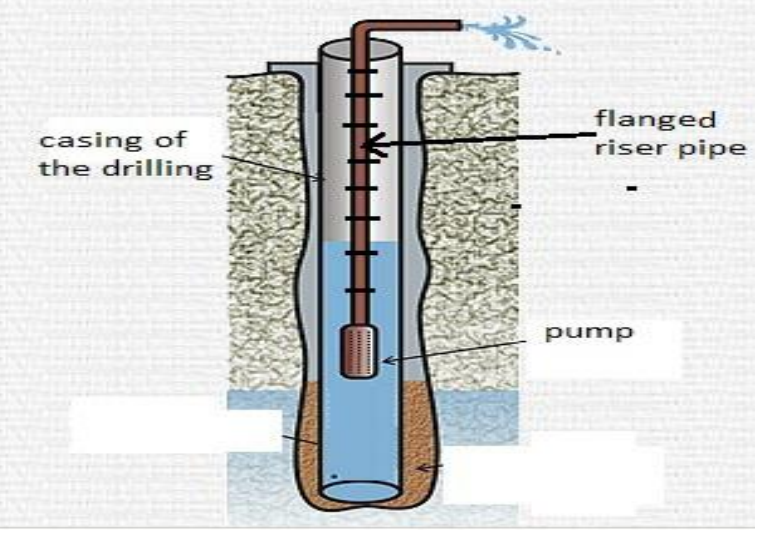
- Air compression Drilling
- DTH or mud System, ecologic foam is used
- Continuous Casing prevents int erference to underground wa ter table.



Track Record Prospected & Drilled: ~1,200+ wells

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Previous Works							
General Data				*Well Characteristics*			
Fecha	Lugar	Provincia	Pais	Profundidad	Caudal l/h	Caract. Agua	Temperatura
1977	Vic	Barcelona	España	186	60,000	Mineral	
1983	Freginals	Tarragona	España	160	70,000	Mineral	
1985	Samalús	Barcelona	España	205	50,000	Thermal	70ºC
1986	Duravel	Valle du Lôt	Francia	80	40,000	Mineral	
1986	Mirabent	Tarragona	España	70	1,80,000	Mineral	
1987	Tivissa	Tarragona	España	150	40,000	Mineral	
1990	Samalús	Barcelona	España	290	80,000	Thermal	
1991	Cobreces	Cantabria	España	220	60,000	Thermal	
1994	Cobreces	Cantabria	España	380	40,000	Thermal	
1995	Colon	Entrerríos	Argentina	280	80,000	Thermal	
1995	Diferentes zonas	Cataluña	España		Varios acuíferos Thermales		
1995	Pta. San Basilio	Baja California	Méjico	280	70,000	Mineral	
1997	La Falda	Cordoba	Argentina	580	20,000	Thermal	38ºC
1997	Capilla del Monte	Cordoba	Argentina	510	50,000	Thermal	42ºC
1997	José Ignacio		Uruguay	230	30,000	Thermal	28ºC
1997	José Ignacio		Uruguay	60	60,000	Mineral	
1997	Sta. Rosa	La Pampa	Argentina	180	1,80,000	Mineral	
January-98	Benasque	Huesca	España	700	80,000	Thermal	70ºC
January-98	Benasque	Huesca	España	205	50,000	Sulphur	
January-98	Benasque	Huesca	España	140	1,50,000	Mineral	

Track Record: Experience of Prospecting & drilling 1200+ Wells globally with 98% Accuracy

Spanish	**English**
Thermal	Thermal
Agua Riego	Irrigation Water

Track Record

WaterQuest Hydroresources
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SPAIN
featured projects

Drilled: **+1,060 wells**

Accumulated caudal

138.522.400 l/h

Drill

+1.060 water wells

Thermal water Mineral water Sulfur water

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BRONCHALES
Teruel - Spain

1	Cold Water	246.000 l/h Mineral natural 210 mts.
2	Hot Water 23 °C	80.000 l/h Thermal water 600 mts.
3	Cold Water	260.000 l/h Mineral natural 230 mts.
4	Cold Water	200.000 l/h Mineral natural 430 mts.
5	Hot Water 40 °C	50.000 l/h Thermal water 350 mts.

> Bottling plant
"AGUA DE BRONCHALES"

Working Relation	**Since 1994 (over 20 years)**
Total No. of Water well	**4**
Description of 1st Water well	**Fresh water** supply for the **Muncipality water supply** with capacity of 70,000 l/h
Description of 2nd Water well	The water is **Mineral- Natural** for a **bottling plant**, water flow rate 80,000 l/h
Description of 3rd & 4th Water well	Water well with a depth **of 700 meters** with **two aquifers**, the **One is fresh water** in a depth of **300 meters** and the other in **thermal water** from 380 meters at 40ºC.

Track Record

WaterQuest Hydroresources
WATER FOR ALL

SOUTH AMERICA
featured projects

Accumulated caudal

waterfinders

4.678.100 l/h

Business opportunities

- SPA RESORT
- BOTTLING PLANTS
- Ggolf
- AGRICULTURE

Thermal water · Mineral water · Sulfur water

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Projects for Crown Prince of Dubai

Successful water sources developed in **Hatta Valley, Marmoum, Nad al Sheba - UAE in 2012**

1 drilling is in Nad al Sheba:
Thermal water @46° C with flow-rate - 60000 l/h

2 drilling is in Hatta Valley:
Mineral Water with flow rate of >160,000 l/h

3 drilling is in Marmoum:
Drinking Water with flow rate of >140,000 l/h

Most recent find is in the deserts of the **UAE** where ***experts*** declared there is **NO WATER!**

Awards & Recognitions

WaterQuest – Virtual Water Prospecting

WaterQuest Hydroresources
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Semi Grand Prize 2016
Seoul International Invention Fair 2016, South Korea

Gold Prize 2015
KIPA, Govt. of South Korea

First Prize @
NSIT 2016
Govt of Gujarat

Foundation for Innovation and Technology Transfer
An Industry Interface Organisation at IIT Delhi

Recommendation Letter

I, Dr. Anil Wali , s/o of Mr. B.K Wali in my capacity as **Managing Director** of **Foundation For Innovation and Technology Transfer** , have examined the request of **Mr. Akash Mahendra Bhavsar, Co-Founder & Director** of **WaterQuest Hydroresources Management India Private Limited** to validate the nature of business and after due examination, I recommend that the business being pursued by the applicant is innovative in nature and may therefore be considered as a business covered under the definition of Startup as per the notification no. G.S.R. 180(E) dated February 17, 2016 (F. No. 5(91/2015-BE.I).
The detailed reasons for the recommendation are provided in the annexure to this letter.

(Signature of the Recommender)

Name of Recommender: Dr. Anil Wali
Designation of Recommender: Managing Director of Foundation for Innovation and Technology Transfer
Date: 3rd Jan 2017
Place: IIT Delhi

#startupindia

Recognised & Registered as
Innovative Startup under
DIPP - Start Up India Scheme

SINGULARITY UNIVERSITY

Finalists of
Singularity University
Global Grand Challenge Awards 2016

Skoch Order of Merit
Top 100 Projects of India
Dec 2016

FAST COMPANY
2017 MOST INNOVATIVE COMPANIES

Govt. Of India Recognized

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सत्यमेव जयते

पेयजल और स्वच्छता मंत्रालय
MINISTRY OF
DRINKING WATER AND SANITATION

WaterQuest has been accredited for its path-breaking innovation by The Expert Standing Committee Chaired by Dr. Raghunath. A. Mashelkar, (President – Global Research Alliance & Ex Director General –CSIR) instituted by Ministry of Drinking Water & Sanitation - Government of India.

The details of the same are now accessible on Ministry of Drinking water, Govt of India website. Kindly refer the link of MoDWS website Technology # 23

http://www.indiawater.gov.in/misc/InnovationAccrMC_Rep.aspx

Govt. Of India Recognized

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Certificate No.:DIPP1760

Department of Industrial Policy & Promotion
Ministry of Commerce & Industry
Government of India

CERTIFICATE OF RECOGNITION

Department of Industrial Promotion and Policy

This is to certify that ***WaterQuest Hydroresources Management India Private Limited*** incorporated/ registered as a ***Private Limited Company*** on ***08-10-2015,*** is recognized as a startup by the Department of Industrial Policy and Promotion.

Date of Issue: 03-01-2017
Place of Issue:New Delhi

The certificate shall only be valid for the entity:
- Up to five years from the date of its incorporation/ registration; and
- If its turnover for any of the financial years has not exceeds Rupees 25 crore.

Note:
- **Authorities accepting this Certificate may check its validity on the Startup India portal(www.startupindia.gov.in)**
- This certificate is not the Certificate issued by the Inter Ministerial Board and is not valid for availing Tax benefits
- This is a system generated certificate and hence does not require physical signature

NITI AAYOG, GoI, & MDWS - GoI
invited us to present to Representative of 20+ States in India

WaterQuest Hydroresources
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Minutes documented

W-11011/10/2016-O/o Dir (W&A)
Government of India
Ministry of Drinking Water and Sanitation
****

4th Floor,
Pt. Deendayal Antyodaya Bhawan
CGO Complex, Lodhi Road,
New Delhi – 110003
Dated: 22nd September, 2016

To
The Principal Secretary / Secretary,
In-charge,Rural Water Supply
All States/UTs

Subject:**Minutes of National workshop on NRDWP held on 9-10th Sept., 2016**

13. Representative of WaterQuestHydroResources Management has made a presentation on innovation (proprietary technology) for extraction of ground water present in magmatic layer coming through ocean. He has told that they had been successful in many countries and they have claimed that the scheme is economically viable on a long run especially for water stressed areas. JS (Water) has told that states may discuss in detail with them for further course of action.

Advisory Board

WaterQuest Hydroresources
WATER FOR ALL

Dr. D. M. Mohan
Water Management

Dr. R. Jagadiswara Rao
Expert Geologist

Dr. Janamitra Devan

Mr. Tay Kheng Soon

Yeoh Lam Keong

The World Bank

HMWSSB
HYDERABAD METROPOLITAN WATER SUPPLY & SEWERAGE BOARD

McKinsey&Company

The World Bank

S&P Global

Akitek Tenggara Sdn Bhd

NUS National University of Singapore

GIC

Lee Kuan Yew

Potential Applications of Self-recharging Sources

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Immediate Water Usage:

1. **Drinking Water Supply** in Drought affected area or areas with contaminated GW
2. Irrigation related water supply
3. **Water supply for Industrial** Parks/Cities

Mid-long term water usage:

1. **Water Banking:** Interconnecting Self-recharging flowing water sources with sub-surface aquifers for a non-rain recharge system for ensuring perennial ground water recharge.
2. **Parallel/Alternate/Feeder Water supply network:** To provide redundancy in case of critical failure in case of surface water contamination, drought conditions or any disruptions in any form of conventional water supply network.
3. **Harnessing Geothermal energy** /air-conditioning and other downstream activities

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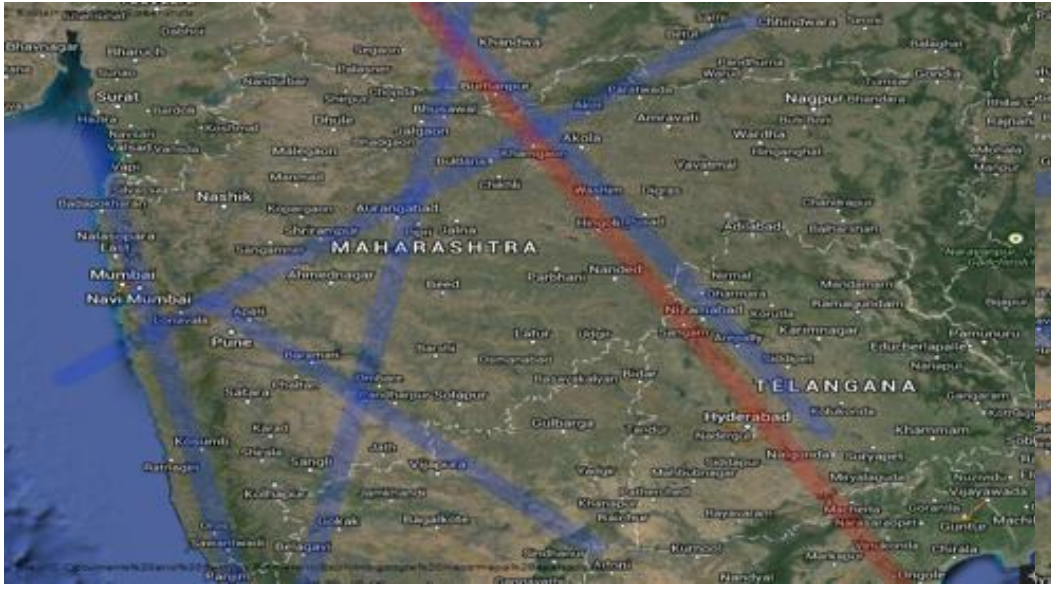
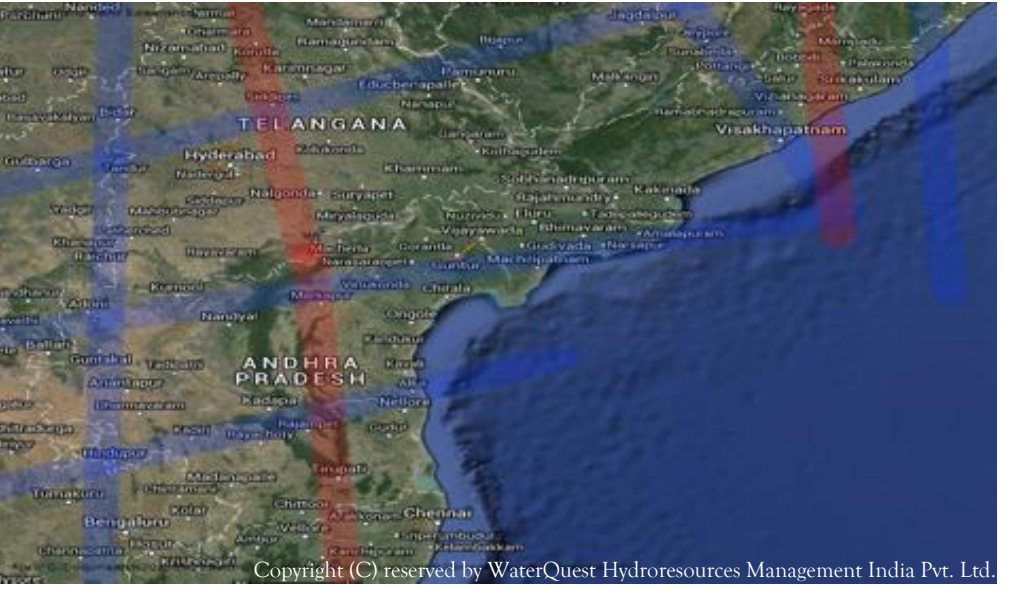
High Level Mapping of Self Recharging Aquifers in various states in India

Karnataka, Andhra Pradesh, Telangana, Maharashtra,Gujarat, Haryana & Rajasthan
Identified prospective locations with capacities of 100,000 - 200,000 Liters/Hour





India: High-Level Virtual Prospecting Study Results

WaterQuest Hydroresources
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States (Regions/Cities/Districts)	Requesting Organizations	Specification of Water (Approximate Ranges)	
		Depth (In Meters)	Flow Rate (in Litres/Hour)
NEW DELHI **1. Indian Parliament - Presidential House – Janpath Area**	1. New Delhi Municipal Council	400 to 670	60,000 to 1,20,000
RAJASTHAN **1. Rajgarh** **2. Sadulpur** **3. Manpur Macheri** **4. Jhunjhunu** **5. Kishangarh**	1. Public Health Engineering, Ground Water Department, Jaipur - Govt. of Rajasthan 2. Ground Water Department, Jodhpur	240 to 550 m	50,000 to 1,50,000
HARYANA	1. Kurukshetra	300 to 480 m	70,000 and above
MADHYA PRADESH	2. Inayatpur, Kolar, Bhopal	350 to 400 m	80,000 to 120,000
KARNATAKA	3. Bidar District	250 to 430 m	80,000 to 120,000
	4. Bengaluru (Rural & Urban)	240 to 400 m	80,000 to 110,000

India: High-Level Virtual Prospecting Study Results

WaterQuest Hydroresources
WATER FOR ALL

States (Regions/ Cities/ Districts)	Requesting Organizations	Specification of Water (Approximate Ranges)	
		Depth (In Meters)	Flow Rate (in Litres/Hour)
ANDHRA PRADESH **1. Anantapur**	1. The Honorable Cabinet of the State of Andhra Pradesh 2. Planning Department of Government of Andhra Pradesh	350 to 530	70,000 to 150,000
2. Visakhapatnam	1. The Greater Visakhapatnam Municipal Corporation (GVMC)	350 to 700	70,000 to 150,000
GUJARAT **1. Radhanpur** **2. Dahod** **3. Dhordu**	1. Honorable Chief Minister's Office 2. Gujarat Water Supply and Sewerage Board 3. Water & Sanitation Management Organization 4. Gujarat Water Resources Development Corporation Limited 5. Ground-Water Management Models	390 to 520	50,000 to 1,50,000
MAHARASHTRA **1. Latur** **2. Beed** **3. Jalna** **4. Solapur** **5. Satara** **6. Raigad** **7. Usmanabad** **8. Parbhani District**	1. Reform Support & Project Management Unit of Water Supply and Sanitation Department, Govt. of Maharashtra 2. Ground Water Surveys & Development Agency - Govt. of Maharashtra	300 to 600	50,000 to 1,50,000

High Level Mapping of
Self Recharging Aquifers in various states

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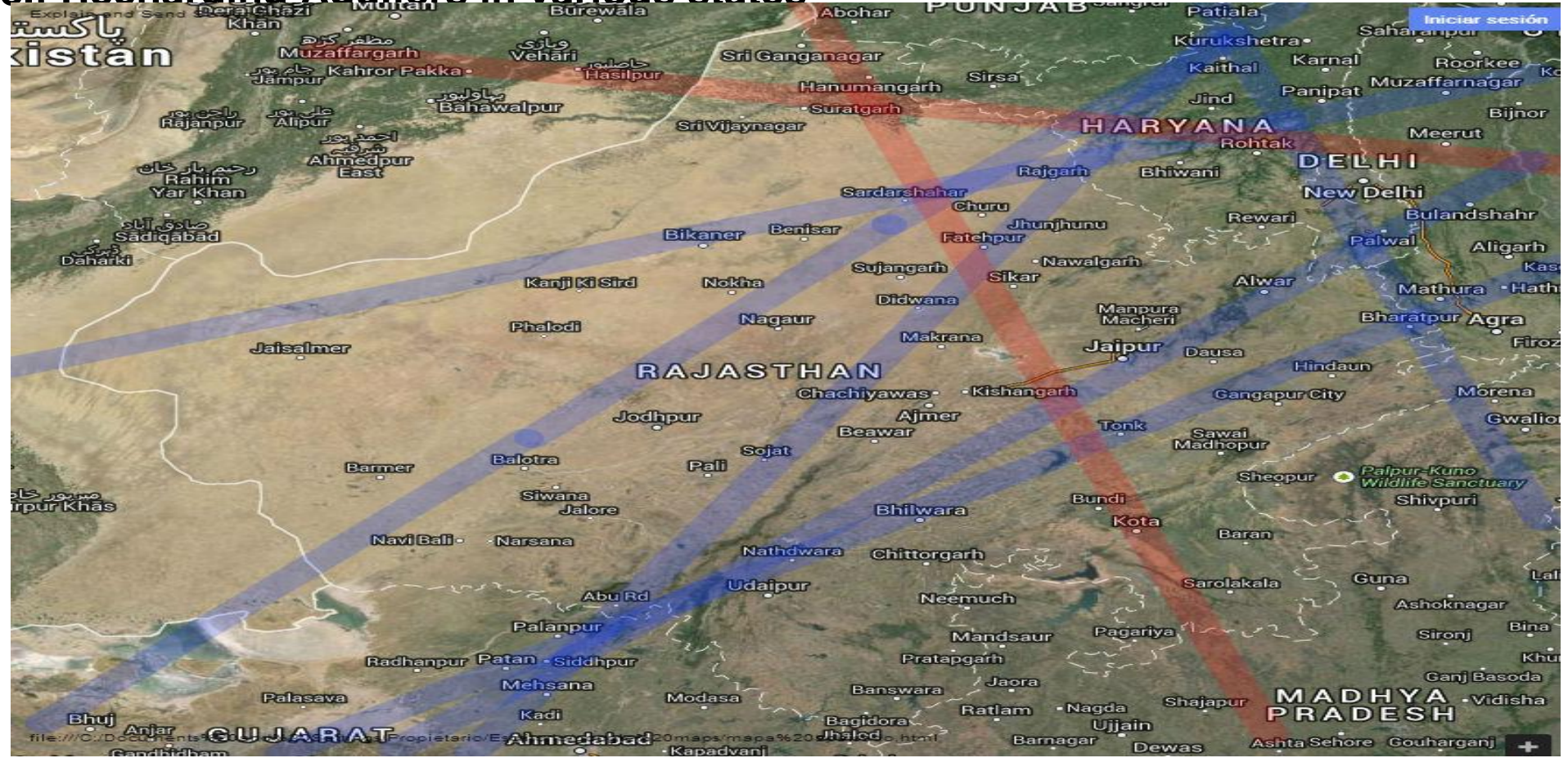

High Level Mapping of
Self Recharging Aquifers in North Thailand, ASEAN Region

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High Level Mapping of
Self Recharging Aquifers around Yuba City, North California, USA

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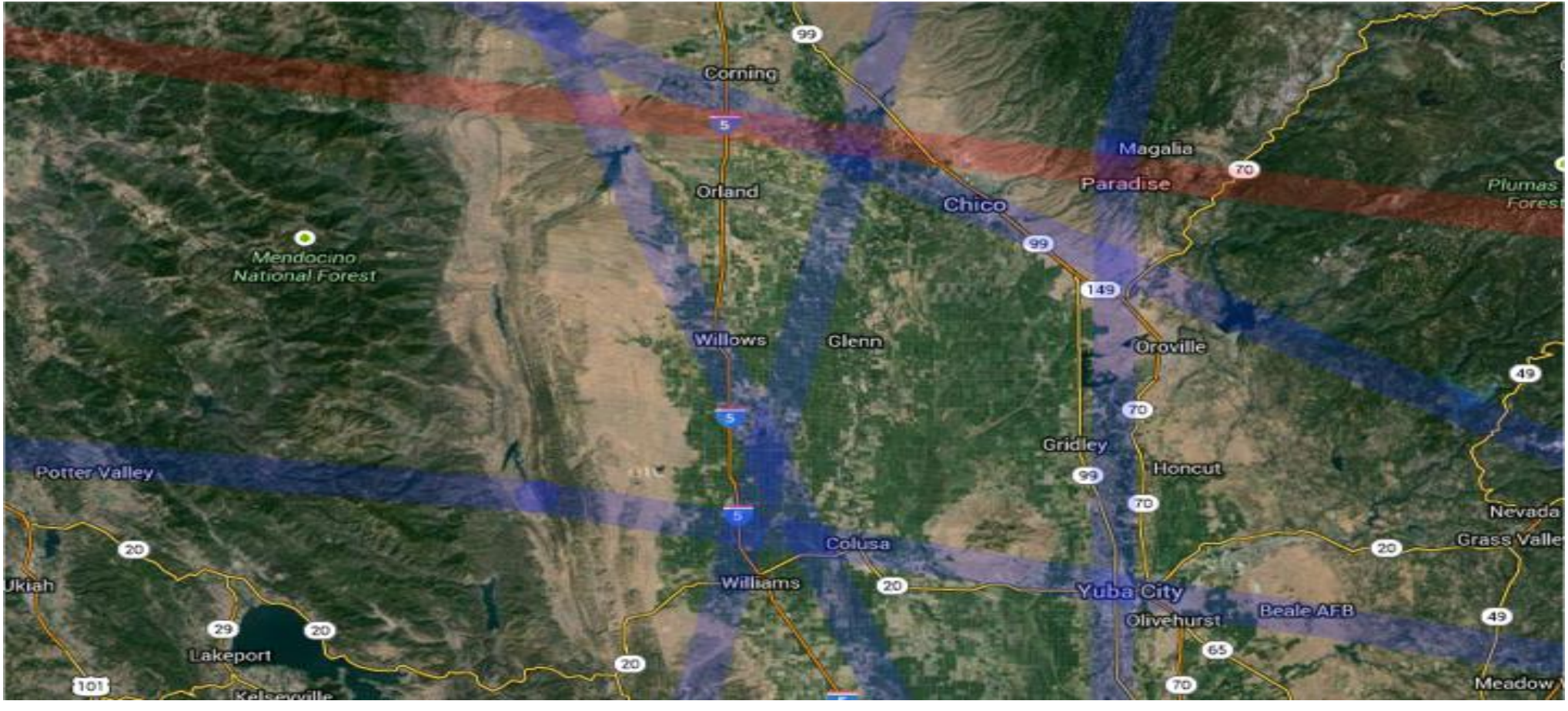

Water Source Development Economics

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For Source with Output **150 M^3 PH*** | CAPEX ~ **INR 17,50,00,000/-**
Timeline to develop the source: **3# Months from signing of contract**

Water Output MLD	Only for Drinking at 10 LPCD		At 25 LPCD		At 40 LPCD		At 70 LPCD		At 140 LPCD	
	Population Coverage	Per Capita Cost	Population Coverage	Per Capita Cost	Population Coverage	Per Capita Cost	Population Coverage	Per Capita Cost	Population Coverage	Per Capita Cost
2.7 – 3.3	2,70,000 – 3,30,000	**INR 583**	1,20,000	**INR 1458**	75, 000	**INR 2333**	42857	**INR 4083**	21429	**8167**

Operational Cost	Effective Price INR / M^3
Cost of Production – Pumping cost	2-4
Cost of Treating Water	Negligible

Ref: 18-22 Hour Pumping Daily
*M^3PH = Cubic meters/hour;
#-Mobilization of Equipments

Project Timelines

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Timeline to develop the source: **90 days from signing of contract**

Scope of Work	Timelines
Contract Signing	T
Rig Preparation & Mobilization	T+45 days (45)
Source Development	T+75 days (30)
Pumping and Stabilization Tests	T+85days (10)
Water Sample Report and Hand over	T+90 days (15)
Total	**90 days**

Advantages of WaterQuest Technology

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- **Quantity:** Decentralized sustainable water sources development and management of high volume flows

- **Quality:** Provides ability to locate and identify water-wells with specific desired quality and/or type of water as in quality with respect to for industrial use/agriculture use/drinking purpose, etc. whereas type with respect to temperature may be normal/ thermal

- **Sustainability:** Self replenishing and self-recharging perennial flowing water veins which have no adverse Environmental Impact and has several social benefits

- **Reliability:** One-of-its kind virtual prospecting technology with 98% accuracy in identification of self-recharging & self-replenishing perennial water-veins. The availability of water is independent of seasons and rainfalls

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Social & Environmental Impact

- **Decentralized & sustainable water sources** development & management, No dependence on **Rainwater** or other surface water for recharging thus **reliable, sustainable and perennial water supply to citizens.**
- **Reduced social unrest** & significant **reduction in project related displacement issues** of communities. There will be no project affected families.
- Has **no adverse environmental impact** owing to extraction of water from self-replenishing flowing water sources vis-à-vis static water/local ground water
- Reduced environmental impact due to reduction in waste water and elimination of sludge from treatment
- Reliable, perennial supply of high quality water leads to improved health indicators and productive population
- Significant Improvements in Human Development Index

Thank you for your time

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WITHOUT

WITHOUT

@waterquest

enables us to develop decentralized, perennial sustainable water supply for drinking water, irrigation and industrial use
by discovering & accessing self-recharging water veins

Akash Bhavsar, Co-founder & Director | +1 617 230 0741 | +91 98980 90605
ab@waterquestresources.com | http://skyquestt.com/waterquest/