

## Primary Water\_Explanation

Primary water is not a new term. It is medieval and resurrected in the 1700s to represent water that was formed with the formation of the Earth. Essentially, all water is primary. The principle of conservation of mass indicates that this is so. Water circulates and is always in motion driven by pressure and temperature or gravity and heat. It always moves from sources to sinks. We sometimes say that very deep water is connate water meaning that it was entrapped within sediment at the time of deposition. Even so, it is in motion moving from sources to sinks. That is moving from recharge zones to discharge zone from whence it flows in rivers to the sea or an interior sea and evaporates to begin the cycle over again... We may determine the age of the water using several methods. I routinely have water carbon-14 dated. Water below downtown Tucson is 14,000 years old. I also use tritium (half-life 12.43 years) or CFC's (invented in 1929 and put into commercial production in 1931.) Other isotopes also may be used when present. Primary water is a marketing gimmick. I have worked also throughout the world and have located water. It is straight forward. I was sent by the State Department once to Mali to locate water-well sites. **Traveling north from Bamako to Dilly in the north at 40 mph. I simply pointed to one site after another. When asked how I did it without stopping the Rover to examine the geology. I pointed out that each location I picked had a termite mound. Termites are great groundwater explorers.** Call it what you will water is water, connate, meteoric, fossil. The age of the water is judged by what is dissolved in it but that is not its true age. It is much older. Radioisotopes are only useful for about 8 half-lives. So in the case of Tritium there is none after about 100 years.

Dr William M Turner

\*\*\*\*\*

### **DR. WILLIAM M. TURNER** **HYDROGEOLOGIST**

Dr. Turner is President and Chief Hydrogeologist of AGW Consultants. He holds a B.S. in Geology a M.S. in Geology and Geochemistry and Ph.D. in Geology and Hydrology. Dr. Turner is a Certified Ground Water Professional and a Registered Professional Geologist in Idaho, Wyoming, Texas, Georgia, Missouri, New Hampshire and Arizona. His certification is pending in California, Louisiana, and Maine. Thirty two state do not require certification or operate through reciprocity. He has been involved in all aspects of ground-water hydrology and the valuation and brokerage of water and water rights for more almost 50 years.

Dr. Turner is a recognized expert in ground-water exploration and development and drilling technology and an expert is the brokerage and sale of water and water rights throughout the United States.

Dr. Turner has worked throughout the United States and 20 countries in Africa, Latin America and Asia as a consultant to government agencies and private clients.

During his career, Dr. Turner has designed and supervised the drilling of hundreds of municipal, industrial, and irrigation wells up to depths of 3,000 feet (900 m).

Government agencies and international lending institutions have called on him to specify drilling equipment in many South American and African countries. He has also been an editorial assistant to professional technical journals.

He has been called on to evaluate and troubleshoot ground-water exploration and drilling projects worldwide.

Dr. Turner has been an innovator in ground-water exploration methods and uses a broad array of methods where applicable including:

- Geology
- Seismics
- Thermonics

- FracRad
- Hydrogeochemistry
- Hydrogeothermics
- Geomorphology
- Magnetism
- Photogeology
- Gravity
- Fracture Trace Analysis
- Streaming Potentials
- Earth Resistivity
- Cultural Biology
- Ground Conductivity
- Tracers

Dr. Turner located several of the largest production capacity wells in the entire Tucson Basin of Arizona using his proprietary Thermonic, geophysical, ground-water exploration methods.

In Africa, Dr. Turner has taught aerial photographic, ground-water-exploration methods to hydrogeologists. He regularly teaches technical courses.

Dr. Turner reads, writes and speaks English, German, Greek, French, and Spanish. He also has a fundamental knowledge of Turkish and Russian. He has studied Arabic and several American Indian languages.

Dr. Turner is a recognized authority on natural resources, water policy and water law. He regularly teaches courses on these subjects.

In addition to his consulting activities, Dr. Turner was a candidate for the United States Senate in 1996 and the New Mexico State Senate in 1998. In 1995, he was appointed by Governor Johnson of New Mexico as the State Natural Resources Trustee, a non-salaried position. He created and was a member of the Governor's Task Force on Water for the State of New Mexico from 1995 to 2003. Southwest. In 2005 he was elected a Member of the Middle Rio Grande Conservancy District. He is a Member of the Board of Directors for the New Mexico Foundation for Educational Excellence. In 2014 he was awarded the New Mexico Citizenship Award by the New Mexico Foundation of Open Government.

<http://www.agwconsultants.com/resumes/wmtbio.htm>