

Report on measurement and assessment of  
physico-chemical and electromagnetic effects of  
«Somavedic Atlantik»  
on water  
Somavedic Atlantik

Report ZI.	12/2015
Date	January 31, 2015
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Number of pages	28 (without annexes)
Annexes	2

## Content

### Page

1.	Order .....	3
2.	Subject of the analysis: Water .....	4
3.	Report on measurement of water coherence spectroscopy .....	10
4.	Assessment of spectroscopic results .....	12
5.	Report on measurement of physico-chemical parameters of water .....	20
6.	Assessment of physico-chemical analysis results .....	23
	Authorized shortened version .....	28
	Annexes.....	29
1.	Coherence spectra in comparison with the reference sample	
2.	Coherence spectra in comparison with Somavedic Medic .....	

### Important Notes

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The spectroscopic method of phase coherence used in this report has been yet undergoing scientific development and is not yet universally accepted method for studying water. However, this procedure has been blank-tested on 8 samples in a project of the University of Kassel (Report No 112/2009 of November 30, 2009). The databases used for the interpretation of the results have an empirical basis recognized by university science only in the individual points.

Examination of the composition, production and operation of this product was not a subject to the order. Only the electromagnetic signature that affects the device in water was examined. Because water is the simplest model to receive such signals by biological systems, an estimate of biological effectivity was made on these basis. Statements in this area cannot be in any way understood as medical or pharmacological or as a promise of therapeutic effect.

It is no a task of the project owner to report about the product to the third parties. The preservation of the quality of the product (the product's effectiveness) is the responsibility of the manufacturer. The contractor is not responsible for the information of the manufacturer.

## 1. Order

IIREC, International Institute for Research on Electromagnetic Compatibility (Electromagnetic compatibility on biophysical basis), was commissioned by Somavedic Technologies s.r.o. to examine the ability of the «Somavedic» Atlantik product to transmit electromagnetic signals of a potential biological impact on the water. Thus, objective evidence for the confirmation or refutation of the effects claimed by the manufacturer should be obtained.

Using the classic physico-chemical parameters (such as pH value, redox potential, electrical conductivity), it should be further assessed whether Somavedic Atlantik causes changes in the tap water. The biological significance of the results should be assessed by a bioelectronic analysis of the terrain according to VINCENT.

In both cases, examination was carried out by comparison, i.e.. comparison of water modified by Somavedic Atlantik with tap water, which was not affected by this device. The spectroscopic analysis results were compared with results of an analysis on the Somavedic Medic product prepared earlier (message ZI. 11/2015).

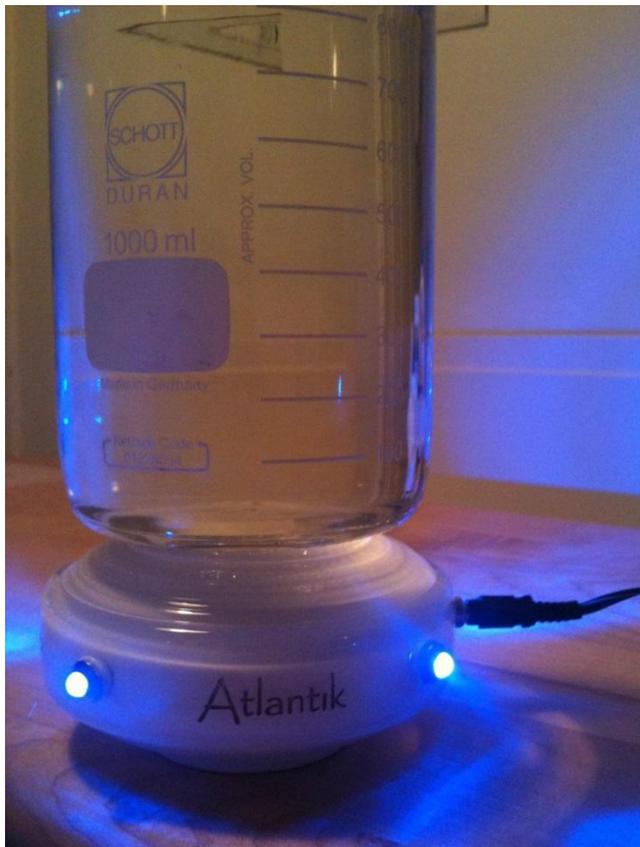


Figure 1:

A water sample modified by Somavedic Atlantik was acquired by leaving the glass bottle with a capacity of 1 litre on a pad activated by electric power. The bottle was filled with tap water and stood on the machine for 24 hours. The reference sample was acquired in the same way, without being modified by Somavedic Atlantik.

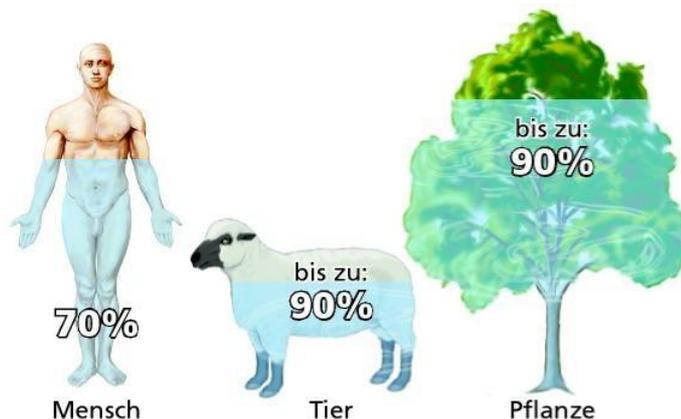
Somavedic Atlantik has a shape of a cylindrical blade, which is activated by plugging into the power supply (with a power supply unit designed for that). In the activated state, blue lights along the sides of the device are on (Figure 1). According to the data provided by the manufacturer, Somavedic Atlantik improves structure, properties, «memory» (i.e. embedded signals, see sections 2 to 4) and the «water energy potential» (see sections 5 and 6). The manufacturer primarily claims that Somavedic Atlantik removes water pollution, which causes headaches, and often has resulted in insufficient drinking regime.

## 2. Subject of the analysis: Water

Although this analysis addresses Somavedic Atlantik (hereinafter referred to as "product") according to the order, it is necessary to take a more detailed look on the subject of the analysis itself - water.

### 2.1 Basic data

From physical, chemical and biological point of view, water is one of the most extraordinary substances at all. A person can survive without drinking water just a few days. Water is the main part of the mass of body tissue and must be constantly renewed. The human body is up to 70% of its mass formed by water (see chart 1). Water metabolism and quality of body fluids therefore fundamentally affects the vitality and health of the human organism.



Legend: Mensch-man; Tier-animal; Pflanze-plant; bis zu 90%-up to 90%  
Chart 1 Water is the main part of the mass of all living creatures.

## 2.2 Electromagnetic properties of water

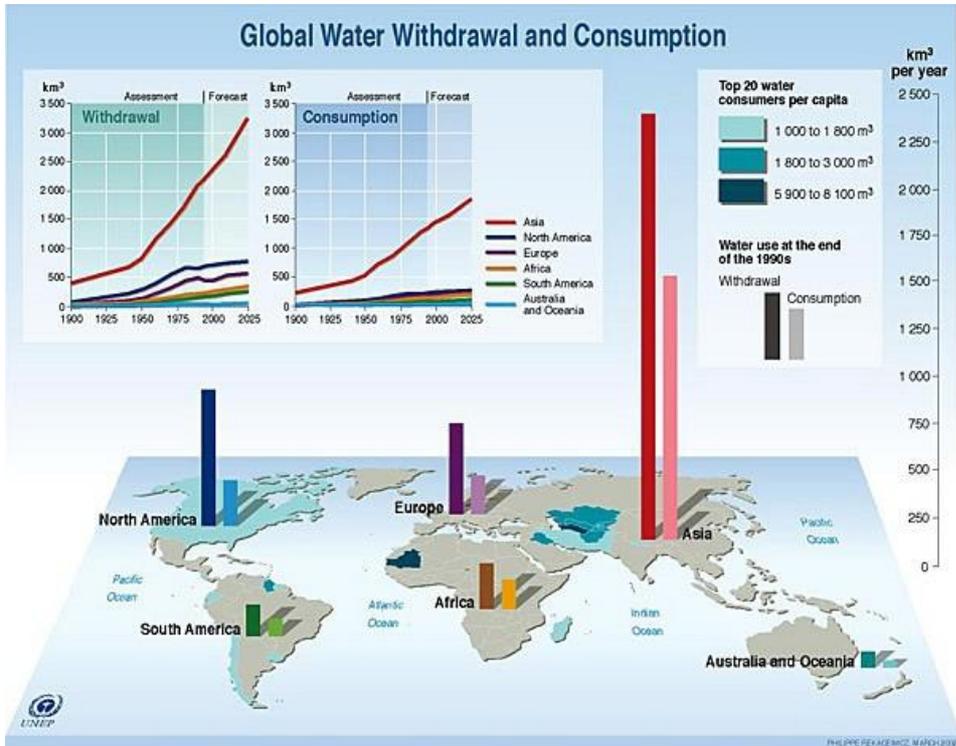
Of all the chemical elements, hydrogen and oxygen, the elements that make up the water, show the second biggest difference of electronegativity (i.e. the effect of the snapping of electrons; this difference is higher only between hydrogen and fluorine in the harmful hydrogen fluoride). Water molecules are highly polar. A very high dipole moment of water (partial electric charges of hydrogen and oxygen, multiplied by the distances) and extremely high dielectric constant (DC, describes the ability of the accumulation of the electrical fields) are a result of that. The DC value is around 80, but as for water, it fluctuates more than in any other known substance.

Charts 2 and 3 illustrate the strong increase in offtake and consumption of water, necessary to be counted globally. States such as France, USA or China, which now has rich supplies of water, will have to start widely use them.

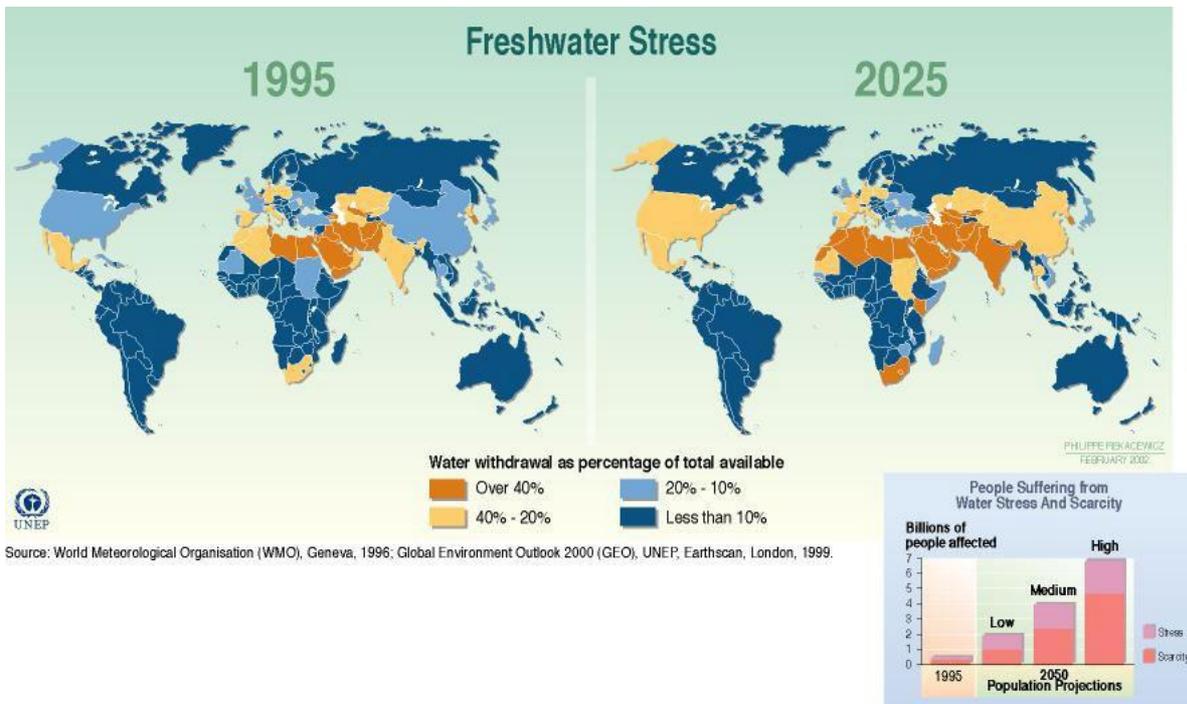
Water quality and biological value has not been described by the usual physical, chemical or biological analysis procedures in a sufficient way. The analysis of the electromagnetic signature of water significantly extends the common test procedures. It is necessary to perceive water - as the main component of the mass - as the building mass of all living creatures. The impact on water is equally reflected in the biological system. To understand why the structure and biological value of water are influenced by electromagnetic signals both inside and outside the body, we must become familiar with the latest scientific knowledge about the properties of water in the area of electricity and quantum physics.

The strong dipole character of water molecules results in extraordinary properties of water from the electromagnetic point of view, e.g. high intensity of interaction with electromagnetic waves. Because the waves (e.g. radio or light) are far longer than the dimensions of water molecules, neighbouring water molecules are due to such waves encouraged to coherent movements (in phase).

Around 1990, Italian physicists Del Giudice and Preparata managed to derive from calculations of quantum physics that the so-called coherent regions are vigorously heavily advantaged in liquid water. Coherence of the movements of molecules determines the high degree of arrangement in the crystalline grid. Later, such properties with almost liquid crystals were found in the so-called experiment with the aqueduct (E. Fuchs) and surface water (exclusion zone by G. Pollack). With their coherence and stability, the coherence domains are suitable for storing electromagnetic signals. The molecules there are no longer arranged individually or as freely connected dipole molecules, but for example. as a circular (hexagonal) giant molecules.



Source: Igor A. Shiklomanov, State Hydrological Institute (SHI, St. Petersburg) and United Nations Educational, Scientific and Cultural Organisation (UNESCO, Paris), 1999; World Resources 2000-2001, People and Ecosystems: The Fraying Web of Life, World Resources Institute (WRI), Washington DC, 2000; Paul Harrison and Fred Pearce, AAAS Atlas of Population 2001, American Association for the Advancement of Science, University of California Press, Berkeley



The electromagnetic waves coming from outside, contact with mineral surfaces or polar organic structures like in the cell support the creation of such highly organized structures in water, which are manifested in the frequency band. Each of the frequencies can be assigned with a crystalline arrangement of water molecules.

Because our body consists mainly of water (over 99% of the molecules in our body consists of water molecules!), because of the ability of water to store information and form structure because it is a recipient of natural signals that represent important biological control signals and are also transmitted to our body, water is the simplest model of a biological system. This fact was used in this analysis, too, to derive basic information needed for the assessment of the effectiveness of the product from the nature of water with low-frequency signals.

### 2.3 Properties of coherent water; proof of embedded signals

In coherent domains (strongly coordinated areas of water molecules), water molecules do not behave as individuals, but as a collective. In the terminology of physics, they are called a quantum system. In this system, the laws of quantum physics apply, which are really differ from the laws of Newtonian physics

For example, coherent domains in water and biological systems are highly conductive (conductive without loss) already at room temperature. This effect of electrical resistance degradation is otherwise known only in the so-called superconductors at very low temperatures. Electrically charged particles and magnetic fields are not able to penetrate into the superconducting areas (Meissner-Ochsenfeld effect). The exclusion of ions, dye molecules etc. led Pollack to creation of the concept of "exclusion zone".

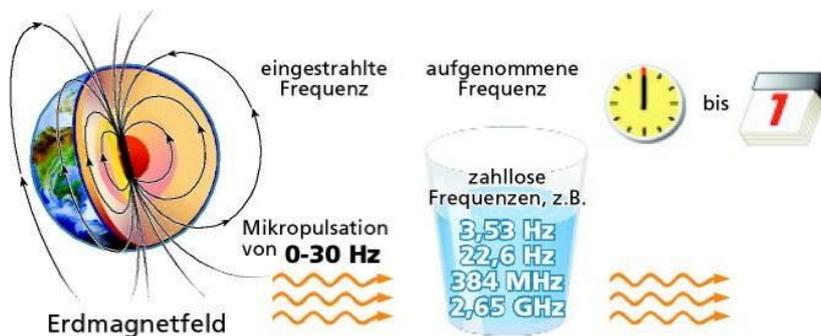
These coherent zones behave diamagnetically and avoid magnetic fields. This method of magnetic behaviour is the opposite of paramagnetism, a well-known form of magnetism, which lies in an unpaired spin of individual electrons. By contrast, diamagnetism occurs only with exclusively paired electrons, i.e. always two electrons with opposite spin form a pair.

Another consequence of the coherent behaviour of water is the creation of specific frequencies. Electromagnetic waves in water significantly slow down due to the high dielectric constant. Because the dimensions of coherent domains in a coherent water (according to the length of the occurring coherence waves) become constant (instead of the speed of light in the air), they occur along with high frequency radiation (e.g. in the form of waves of mobile phones, chart 4) in coherent water with extremely low frequencies. These low frequencies are stored in water as a coherent, vibrant arrangement of dipole molecules ("the memory of water").



Legend: Haushaltsstrom - household electric current; Computer - computer; Handy – mobile phone

Chart 4 Electromagnetic radiation stores in several frequency bands in water. Microwave frequencies in megahertz and gigahertz band correspond to the electromagnetic wave travelling at the speed of light. Low frequencies in hertz band result from about 100 million times slower coherent waves in water. Higher frequencies in terahertz band from photonic tunneling at superluminal speed, as experimentally proved by Günter Nimtz, a Cologne professor of physics. Falling high frequency is rapidly (within minutes) absorbed by water samples, while low frequency (as the current frequency of 50 Hz) absorbs much slower. The process can be accelerated only by mechanical or electromagnetic impulses.



Legend: eingestrahle Frequenz - falling frequency; aufgenommene Frequenz - absorbed frequency; Mikropulsation von 0-30 Hz - micropulsation from 0 to 30 Hz; zahllose Frequenzen - countless frequencies; Erdmagnetfeld - geomagnetic field

Chart 5 The natural frequency spectrum of water is formed by magnetic field and other geological and atmospheric sources and relevant parallel frequencies.

Water from natural sources engulfed frequency cycles and micropulsations of geomagnetic field and resonances between the ground and the atmosphere (Chart 5). Human body needs these extremely low frequencies and their parallel frequencies in the microwave range as a natural synchronizer.

Mechanism of frequencies storing in water: Emilio del Giudice, Cyril W. Smith and other physics showed that the penetration of frequencies into water is a co-result of two magnetic values of fields that are referred to as fields A and B in physics. The phase ratio of the two fields (the relative oscillation,  $0^\circ$  or  $180^\circ$ ) is basic for the biological nature of the signal (regenerative or degenerative). Pathological symptoms of electromagnetic hypersensitivity are seen e.g. at patients whose body fluids manifested frequency with a certain phase position between fields A and B. The water at the same frequency but opposite phase position can eliminate these symptoms.

To demonstrate the reflection of such signals, it is important to monitor not only the frequency but also the position of the phase and polarity. As used herein, coherence spectroscopy analysis procedure uses the above-described effect of multiple frequencies: Induced magnetic resonance stimulus with circulation polarized (circularly oscillating) magnetic pulses in the low frequency range (0-100 Hz) are detected as the microwave band parallel resonance. Loop antenna captures high frequency magnetic vortices and displays the induced voltage. These values presented in the chart with frequency consist of (+) or (-) spectral curve - it depends on whether the stimulating vibration right- or left- rotatory. Each signal can be attributed with a mark in these curves, namely on the basis of the deviation from the baseline upwards or downwards. The sign itself, however, does not have an evaluative character, the negative signal pointing downwards may have a biologically positive effect (and vice versa).

### 3. Report on measurement of coherent spectroscopy of water

#### 3.1 Phase coherence resonance spectroscopy

The basic principles of this method have already been explained in section 2.3. Using frequency band of circular or loop antennas and adjusting the transmitter, a definite frequency is given, and so - by presenting the registered inductive voltage in a chart with the frequency - the spectrum may be detected. The apparent resonant frequencies in the spectrum suggests that they will form the corresponding coherent structures in water.

Number of interferences that can be used to adjust the transmitter Rayometer PS10, is characterized by periodic phases of waves with corresponding electromagnetic frequencies. It is determined by calibrating the transmitter on the frequency generator in the kilohertz band: Setting interferences from 10 to 100 results in a phase position that resonates at electromagnetic frequencies from 10 to 100 kHz. This calibration offers a decadal periodicity - a resonance in the set of interferences from 10 to 100 is repeated for decimal dividends and multiples of frequencies from 10 to 100 kHz, ie, from 100 kHz to 1 MHz, etc. To detect the signals of particular frequencies in the sample, it is necessary to have a selective detection system for the frequency band which is under examination. For the documented measurements a circular antenna was used with a sensitivity that ranges between 80 to 400 MHz.

For the spectra, fundamental frequencies from 0 to 100 (Hz) are given, which are the basis of the above described biological resonance frequencies. Because of the creation in the interference transmitter, these fundamental frequencies are called "interferencies". Spectral fuzziness is +/- 0.5 Hz.

Between the interference transmitter that emits excitation signal, and a magnetic base, which transmits the signal to the sample, a polariser was used while recording the to emit a corresponding signal either as right-rotatory (+) or left-rotatory (-) circular polarization signal.

#### 3.2 Preparation of samples and capture of coherence spectra

Samples of 200 ml of water were removed from the glass bottles with tap water (see Fig. 1, it was exposed / unexposed to the impact of Somavedic Atlantik) in water laboratory of the IIREC Institute. The container (beaker) in which the sample was stored was always rinsed 3 times with water used for the analysis; only then it was filled and analysed with spectroscopic apparatus.

Spectroscopic measurements of samples took place in laboratory conditions (i.e.. in an undisturbed environment) with an upstream polariser in the "+" or "-" (right- or left-rotated polarized excitation wave). For each sample, a maximum value - according to the settings of the respective frequency occurring value of resonance signal (in mV) - was recorded.

### 3.3 Evaluation and spectral presentation of results

The measured values were always presented on a chart with frequency ("interference") to show the spectra. From the range of frequencies in the spectra, one can immediately detect values of the interferences (between 0 and 100 Hz).

Gross values read from the detector were corrected for deviations from the basic course. These core modified values were used to view the spectra. Background noise is  $\pm 5 \mu\text{V}$ . The signal strength from about  $10 \mu\text{V}$  is considered statistically significant from metrological point of view. In individual cases, signals from  $7.5 \mu\text{V}$ , which may be registered without a doubt were taken into account.

To assess the effect of Somavedic Atlantik on water, especially those signals of the spectrum were evaluated that differed in the spectrum of the modified sample in comparison with the reference sample (not modified tap water). Even the unchanged signals showing significant intensity were taken into account.

Comparison of the spectra of the sample modified by Somavedic Atlantik and not modified sample is shown in annex 1.

Due to the fact that in the earlier analysis, (ZI. 11/2015) comparable spectra of a comparable product Somavedic Medic were shown, annex 2 to this report contains a comparison of the spectra of Somavedic Atlantik and Somavedic Medic.

## 4. Assessment of spectroscopic results

### 4.1 The biological significance of results

The frequency stored in the analyzed water in the form of coherent oscillations allow to conclude a super-molecular structures in water and its biological quality. They are like fingerprints of all the influences acting on the structure of water.

The nature of coherent structures in water is reflected in the resonance signals (called vertices) in the resonance spectrum of the phase coherence (abbreviation: coherent spectrum). Resonance signals deviate from the (virtual) basic course both in positive and negative direction. The mark is related to the direction of rotation of the phase of the coherent waves and spatial configuration of crystalline coherent zones in the water. On the basis of comparing resonances of different samples, we can say that there is a biological effectiveness of the impact of water exposure to the product.

If he modified and unmodified sample signals agree, one cannot prove along with the frequency any change in resonance behaviour (there is a frequency stabilization) as a result of water treatment. This means that the resonance had existed already in the reference and the product maintained it. The presence of an additional signal or the signal of the same frequency, but with the opposite sign ("reverse polarity") must, in principle, be seen as a change caused by the product. However, even without this impact, natural water samples change may occur and the mark of the signals may partially or completely rotate after some time (according to our experience, mostly after a few days). But at the same time, our experience exclude such a natural difference for tap water samples.

Analysis in the frequency range from 0,5 Hz showed a wide range of such detailed results, as evidenced by the spectrum in annex 1. To facilitate the interpretation and clarity, the most important results are summarized in table 1.

In the left column of the table, there is the list of the frequencies with significant detected signals in the modified sample. The other columns indicate what effect was achieved by using the product in both circulation polarization (+) and (-), therefore they are listed in 2 columns. The symbols of these effects are explained in the legend to the table.

The largest column lists the relevant physical, chemical or biological resonances, known frequencies of these resonances when differing by no more than +/-0.5 Hz from the excitation basic frequency. Evaluation in this column refers to the area of use, from all of which the characteristic resonance frequency are known. They are explained in the following sections.

4.1.1 Body control according to Western medicine: Dipl.-Ing. Paul Schmidt, a pioneer of bioresonance, discovered a resonance system on which control of all body systems is based (controlling prefrequency, main controlling frequency and underfrequency). These frequencies are related to specific parts of our body, organs, organ systems, but also physiological and mental functions. The table lists these resonances and frequencies of brain currents and other empirical medical resonances that are in accordance with the measured effects of the product.

4.1.2 Body control according to Eastern medicine (chakras and meridians): As for the structures described in the traditional Chinese medicine a few thousand years ago, the latest electrobiological research demonstrated that they are characterized by the increased conductivity (acupoints serve as their nodes). Chakras are the electromagnetic structure of the body vibration. These structures are characterized by resonance frequencies. Here are the resonances detected by Dipl.-Ing. Paul Schmidt. In traditional Chinese medicine, the most important organs have always one meridian (with a certain frequency resonance). Each meridian has a corresponding meridian with the opposite polarity Yin-Yang (and other resonant frequency). Electrophysiological measurements demonstrated certain frequencies on acupoints. These frequencies are listed in the table, even if they occur in the spectrum as a result of exposure to the product.

4.1.3 Pathogenic germs (agents and their toxins): From empirical observations, we know frequencies, which are suitable for the destruction of noxious germs (microbes, parasites), or their toxins. In the table, there are listed the resonant frequencies from the basic spectrum from 0 to 100 Hz, assigned to these frequencies. From the occurrence of such resonances, one can judge that the product supports the defence immune system and favourably suppresses the germs.

4.1.4 Physico-chemical area: Here are listed the resonances of water structures, chemical elements and geopathogenic zones. The frequencies of the water structures were found by the British electrophysicist prof. Dr. Cyril W. Smith. Biological resonance frequencies of chemical elements and geopathogenic factors (mesh network of geomagnetic field, water veins, geological deformation) are taken from the works of the author called Dipl.-Ing. Paul Schmidt. These are not signals of these factors themselves, but biological resonance signals that occur when human body begins to resonate because of these factors.

Help for interpretation: Chemical signals of resonances lie in the fact that chemicals leave an electromagnetic signature in water that you can digitally save and which shows a biological the same or even higher efficiency than the original substance. According to the mark of a resonance, an opposite effect also occurs (cf. homoeopathy). The existence of the toxic heavy metal signal may indicate e.g. a detox effect of this metal.

Resonance (mark/basic frequency in Hz)	Comparison with tap water		Biological importance
	The effect of the (+) circular	The effect of the (-) circular	
- 12,5		<input type="checkbox"/>	Healing Center, life energy, limbic system; cold, asthma
+14.0		<input type="checkbox"/>	testicles, reduced potency; Ren Mai Meridian; geopathie (deformation)
- 15,5		<input type="checkbox"/>	penis, reduced potency; viral diseases
- 24		<input type="checkbox"/>	Cellular frequencies: centriol, Golgi apparatus, ribosomes; vocal cords, bronchi; the adrenal glands; haemoglobin; water veins, deformation; tellurium element
+ 25,5		<input type="checkbox"/>	lymphosarcoma; fat in the blood; elements of cer, tantalum
+ 34,5...35,5	<input type="checkbox"/>		Control: good nature, centre of perception, inflamed tonsils; plasmacytoma; skin allergies; loss of appetite/obesity; bladder meridian (34.4); structure of water: Caduceus spiral ; water veins; chromium element  Effective against: Corynebacterium diphtheriae 34,2; mykoplasma 34,6; Lactobacillus acidophilus 34,90; Proteus mirabilis 34,89; Erwinia amylovora 34,97; Serratia marcescens 35,08; Schistosoma mansoni 35,3; Campylobacter pyloridis 35,46; Nocardia asteroides 35,52; E. coli 35,60; Besnoitia (lungs) prot. 35,71; <i>Herpes simplex 1 (24.56); warts (24.48)</i>
- 36.5		↑	corns; allergy to house dust, skin allergies; suppuration of the upper jaw; meridian: magnesium element  Effective against: Clostridium botulinum 36,28; C. septicum 36,38; Bacillus anthracis 36,43 a 36,50; Nocardia aster. 36,69; Salmonella paratyphi 36,76; Campylobacter (a swab of the fetus) 36,80; Streptococcus SP. 36,85; Strept. pneumoniae 36,85; <i>Coxsackie viruses (26.26 to 26.44)</i>

Resonance (mark/ basic frequency in Hz)	Comparison with tap water		Biological importance
	The effect of the (+) circular polarization	The effect of the (-) circular polarization	
+38		↑	heart rhythm, bile, sexual impulses control elements: chlorine, nitrogen; effective against: Histomonas meleagridis 37,76; Alpha streptococcus 37,76; Staphylococcus aureus/c 37,86; Bacillus subtilis var. niger 37,95; Spirillum serpens 38,06; Staphylococcus aureus/s 38,1; Gyrodactylus 38,03; Trichomonas vaginalis 38,08; Troglodytella abrossari 38,15; Chlamydia trachomatis 38,18; Eikanella corodens 38,19; Epstein-Barr virus (EBV) 37,77; adenovirus 37,92; Borellia burgdorf. 38,05; antigens against mumps 38,11
-39 - 39.5	↔→	↔→	heart muscle, cardiac insufficiency, the pericardium; nerves control; suppuration of the upper jaw; titanium element; effective against: Propionbacterium acnes 38,64; Clostridium acetobutylicum 38,70; Candida albicans 38,63; disputes of bacteria Bacillus anthracis 38,92-; Shigella dysenteriae 39,01; Sphaerotilus natans 39,09; Escherichia coli (E. coli) 39,25; Shigella flexneri 39,4; Branhamella (Neisseria) 39,58; Bacillus anthracis 39,58; Clostridium perfringens 39,62; Toxoplasma (human pathogen) 39.50; Endolimax nana troph. 39,57; Trypanosoma gambiense 39,62; Chilomonas (entire fixation) 39,69; Trichuris SP. 39,86; Entamoeba coli 39,87 trophozoi; Adenovirus 39,3

+ 40,5...41	← 41.5	↔	<p>bacterial bowel diseases; pleura inflammation; cardiac insufficiency, left ventricle control; litium and phosphorus elements; effective against: <i>Klebsiella pneumoniae</i> 40,16; <i>Veillonella dispar</i> 40,35; <i>Iodamoeba butschlii</i> 40,15; <i>Leishmania mexicana</i> 40,20; <i>Leishmania brasiliensis</i> 40,26; <i>Dientamoeba fragilis</i> 40,37; <i>Trichinella spiralis</i> (svaloy) 40,47; <i>Leishmania tropica</i> 40,48; <i>Blepharisma</i> 40,66; <i>Ascaris megalocephala</i> 40,68; the larvae of <i>Ascaris</i> in the lungs 40,70; <i>Pneumocytis Bursa</i> (lungs) 40,75;</p> <p><i>Mycobacterium phlei</i> 41,02; <i>Dirofilaria immitis</i> 40,97; <i>Stiegioclonium</i> 40,98; <i>Proteus vulgaris</i> 41,26; <i>Cryptocotyle lingua</i> (adults) 41,30; <i>Myxosoma</i> 41,33; <i>Cytomegalievirus</i> (CMV) 40,96; various</p>
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Resonance (mark/ basic frequency in Hz)	Comparison with tap water		Biological importance
		The effect of the (-) circular polarization	
- 42.0	↔		heart septum; nerves treatment menstruation; scandium and neon elements;  Effective against: Klebsiella pneumoniae 41,94; Troglodytella abressari 41,96; Anaplasma marginale 41,97; Plasmodium cynorm. 42,09; Echinoporyphium recurvatum 42,12; Eurytrema pancreaticum 42,13; Fasciola hepatica mir. 42,32; Enerobius vermicularis 42,36; antigeny hepatitidy typu B 41,77; Herpes zoster 41,84; warts JB 42,06
-43.0	=		cardiac insufficiency, right ventricle control; kidney stones; fluency; gold, nickel elements  Effective against: Cytophaga rubra 43,02; Fasciolopsis (heavy infections) 43,02; Fasciolopsis (miracidia) 43,13; Fasciolopsis buski (+ ova) 43,14; Endolimax nana 43,19; Fasciolopsis (cerkaria) 43,29; Mycobacterium tuberculosis 43,24; warts CC 42,92
- 46.0		↑	shoulder joint; disorders of blood circulation; bronchi; varicose ulcer; metabolism; platinum, cesium elements  Effective against: Echinococcus granulosus 45,6; Echinococcus multiloc. 45,71; Stephanurus dentalus (ova) 46,02; Balantidium coli (cyst) 46,09; Dipylidium canium (skolex) 46,21; Diphyllobothrium laturm (skolex) 44,26; Hymenolepis diminuta 46,31; Trypanosoma cruzi (brain) 46,30; warts EB et 46,9

+ 47,5		↑	<p>Centre of thinking; blood circulation; secondary heart control; meniscus; uranium, zinc elements</p> <p>Effective against: <i>Schistosoma haemat.</i> 47,3; <i>Taenia solium</i> (<i>Cysticercus</i>) 47,5; <i>Diphyllobothrium erin.</i> 47,74; <i>Taenia pisiformis</i> (<i>Cysticercus</i>) 47,87; <i>Taenia saginata</i> (<i>Cysticercus</i>) 47,88</p>
- 50.0		↑	<p>blood supply, oxygen saturation; defensive ferments; liver meridian (50.2); gallium element</p>

Resonance (mark/ basic frequency in Hz)	Comparison with tap water		Biological importance
	The effect of the (+) circular polarization	The effect of the (-) circular polarization	
+ 51,5...52		↑	nervous system (e.g. multiple sclerosis); the pancreas; inflammation of the tonsils; regulation of to dry or oily skin; lack of calcium; aluminium, iron elements
+ 76,5		↑	the bronchi; ischialgia; lymphogranulomatosis; water veins; rhodium element
- 78.0		↑	joints rheumatism, osteoarthritis, arthritis; water veins
+79.5		↑	Sciatica, nerve inflammation, pressure in teeth, restoring organ cells; regeneration of nerves; water veins; fluorine element

**Table 1:** The characteristic resonances of the sample modified by Somavedic Atlantik (in comparison with tap water) and their significance, taking into account the effects against microbes and parasites

Explanation of symbols used:

- (+) / (-) right-/left-rotative polarizing initiative
- + / - signal mark (deviation from the basic course of up/down direction)
- ± the presence of both signal marks
- ← / → shift to a lower/higher frequency
- ↑ / ↓ newly occurring, or amplified/evanescent or weakened signal
- overpoled signal (change of mark)
- = fixed (stable) signal

## 4.2 Summary evaluation

Significant intense signals recorded in water modified by Somavedic Atlantik, which are stabilized or changed in comparison with the other sample, tell us about the supermolecular structure in water and biological quality of water. The product left an imprint on them.

The effects listed in table 1, it is necessary to interpret it a way the newly emerging signals cause other effects that water had not before the effect of the device took place, and that by overpoling signals, possible harmful or excessive water properties were milded or converted in the positive. From the comparison of the samples can be concluded that Somavedic Atlantik have a positive effect both on the structure of water and its biological effects.

From a comparison with many other water samples and drinks containing water we have examined so far in our Institute, we can conclude that the range of effects of Somavedic Atlantik has a degree of resonance, which is very important for the overall biological organism control (e.g. meridian frequency, cellular frequency, resonance frequency of biologically important elements, etc.) that explain the probability of accidents.

It is encouraging that these findings are consistent with the manufacturer's data and that the spectra of Somavedic Atlantik and Somavedic Medic are consistent.

### 4.2.1 Comparison with the manufacturer's data

The manufacturer's data cited in section 1 (last paragraph) confirm the results below:

- ❖ Improvement of water structure: A resonance or the structural element "spiral of the Caduceus" was identified. A prerequisite for the proven signals is a coherent structure in water.
- ❖ Imprint in water: When measuring the effect of the device, the water remembers the activity in the product, i.e. it stores signals that has influenced it.
- ❖ Removal of water pollution that often cause sore throats: Evidence found in numerous antibacterial frequencies, or frequencies that generally destroy germs, and also in the occurrence of frequencies, which directly act against colds and infections according to the therapeutic experience.
- ❖ In general, it is possible that the demonstrated improved properties of the waters normalize the drinking regime.

In sections 5 and 6, we will pursue the question of whether you can prove to the improvement of the energy potential of water.

#### 4.2.2 Comparison with Somavedic Medic

Comparison between Somavedic Atlantik and Somavedic Medic in spectra in annex 2 (regarding the effect on tap water) brings these meaningful results:

- ❖ The (+) circulating polarization triggered by Somavedic Atlantic in comparison with Somavedic Medic sent less signals, but with stronger demonstrations. In frequency bands around 20 Hz, 34 Hz up to 36 Hz and 70 Hz to 74 Hz, signals of both spectra are remarkably the same.
- ❖ The spectra rich in signals triggered by (-) circulating polarization of an initiative, we observe even a more striking correlation of both spectra, so much so that we can talk about a significant match. It can be seen on similar signals, which are only slightly offset from 24 Hz (Atlantik), or 25 Hz (Medic) to 36.5 Hz (Atlantik), or 37.5 Hz (Medic); and also on almost identical signals in the range from 44 Hz to 54 Hz, on reversely going signals, thus with the same strict correlation in the range from 58 Hz to 62 Hz.

These similar and strongly correlated signals of both products Somavedic show us that they were made with the same "hand", that the manufacturer obviously reliably reaches the same effects in both products and is able to reproduce it.

## 5. Report on measurement of physico-chemical parameters of water

### 5.1 Physico-chemical measurement of quantity of water and their significance

The energy potential of water can be physico-chemically described with simple parameters, which, however, have a highly informative value.

A close link with the chemical composition of water has a physical property of its conductivity. Conductivity in water and liquids with water content is given by content of dissolved ionic substances (electrolytes, such as lime, etc.). Conductivity is defined as the reciprocal value of a specific ohmic resistance. It covers a layer of fluid on force of 1 cm and is measured in mS (milisiemens)/cm.

When measuring conductivity (standard measurement), an electric current is produced by AC voltage between 2 electrodes depending on the conductivity of the medium. Conductivity is given either as the EC (electrical conductivity), for example EC 1.5 = 1.5 mS/cm, or without the decimal point as the CF (conductivity factor), in our case CF = 15. For the conductivity measurements and redox potential and the pH value measurement here, the temperature was recorded too, and the result adjusted for temperature was displayed (applied temperature of 25 °C).

Apart from the conductivity related to content of ions can be the physico-chemical properties of water classically characterized by two aspects:

- a) According to the acidity-alkalinity, or pH value, i.e. enrichment or impoverishment of protons - smaller concentrations of protons (alkaline environment) means pH value > 7, higher concentrations of protons (acidic environment) means pH value < 7;
- b) according to the weight reduction/oxidation behaviour, or redox potential of E (usually given in mV = millivolts, the usual abbreviation ORP = oxidation/reduction potential), i.e. enrichment or impoverishment of electrons - less availability of electrons (oxidizing environment) means a higher redox potential, greater availability of electrons (reducing environment) lower redox potential. In this case, comparison reference value depends on substances dissolved in water.

Biological significance of redox potential: Description of the electrochemical environment as an oxidation or reduction one has the same basic meaning as an indication of the acidity/alkalinity, expressed as pH value. Reactive oxygen compounds, or aggressive oxidizing agents as holders of free radicals are supposed to have destructive biochemical effects. Lower redox potential and higher availability of the electrons have the opposite effect (antioxidants, radical acceptors) and add a fabric exchange of reducing equivalents, thus increases the biological value of water and food.

Aspects of measurement techniques: Redox potential  $E$  can be measured by electrodes in the measuring circuits. Redox potential depends on temperature and pH value. The modern measuring devices measure at the same temperatures as well as redox potential and show the result as  $E$  adjusted to a standard temperature of 25 °C. With every degree above 7 pH, the redox potential of the voltage decreases according to the Nernst equation  $E_N = 59,16 \text{ mV}$ , with each degree below 7 pH increases by about 59 mV, on the contrary

Occasionally, the so-called rH2 value is measured in addition to the redox potential (ORP). This variable is defined as the negative decadic logarithm of partial pressure of hydrogen on platinum electrode with reductive effect corresponding to the ORP, and is independent of the pH value for reduction/oxidation properties of the water sample. The conversion of  $E$  (mV) to rH2 is carried out using the following formula:

$$rH_2 = 2 \cdot (E_H) / 59 + 2 \text{ pH}$$

where  $E_H$  results from the measured redox potential  $E$  according to  $E_H = E + 200 \text{ mV}$ .

## 5.2 Measurement

The measuring tools used and their technical details can be found in table 2. The pH calibration was 2 point (pH 4.01 and pH 7.01), electrical conductivity was calibrated in 1 point (1,413 mS/cm). Calibration of the redox potential from the production was verified by a buffer solution (237,5 mV).

Measurement parameters	EC	pH	ORP
Measuring device	AD31 Tester EC/TDS	AD14 Tester pH/ORP	
Measurement range	0 to 3,999 mS/cm	-2.00 to 16.00	-1.000 to +1,000 mV
Resolution	0.001 mS/cm	0.01	1 mV
Accuracy (20 °C)	± 2%	± 0,01	± 2 mV
Temperature:			
Resolution	0,1°C	0,1°C	
Accuracy	± 0,5°C	± 0,5°C	
Measuring range/ Compensation	0.0 to 60.0 °C	-5.0 to 60.0 °C	

Table 2: Technical data of devices used for measurement of physico-chemical parameters

The same samples were used for recording coherence spectra, i.e. the reference sample of the non-modified tap water and the same test sample water from the same tap water that has been exposed to Somavedic Atlantik.

### 5.3 Results

The results of measurements and the derived rH2 values are summarized in the following table 3. Because the results of measurements of conductivity and of the CF factor are equally important, the value given is always for conduction value of conductivity (EC). The rH2 values were always calculated from pH and ORP values.

Sample/parameter	Conductivity (mS/cm)	pH value	Redox potential (mV)	rH2 value
Comparison (Reference)	0.585	6.80	111.0	24.09
Test (Atlantik)	0.574	7.21	108.0	24.83

Table 3: The results of physico-chemical measurements. Conductivity and redox values adjusted to 25 °C.

## 6. Assessment of results of physico-chemical analysis

### 6.1 Assessment of the absolute values

As a measure to assess the measured values, requirements for drinking water set in Germany and Austria in the Drinking Water Directives can be used.

The limit value for the specific electrical conductivity in drinking water amounts 2.500 mS/cm (at 20 °C), or 2.790 mS/cm (at 25 °C). Both reference and test samples were far from that limit.

Limit pH values in drinking water range from  $6.5 \leq \text{pH} \leq 9.5$ . The measured pH values of the reference and test samples clearly fulfil these limits and are in a "centre" (which is optimal in this case).

Drinking water directives contain no limits. According to the data of the GeoZentrum Nordbayern/Universität Erlangen centre, professional group of Applied Geosciences, Department of Applied Geology (Dr. A. BAIER), the redox potential of the water samples shows the range from 800 mV (strongly oxidative environment) to -300 mV (strongly reducing environment). Measured values of about +100 mV are very low for tap water, and therefore can be described as appropriate. Reduced redox potential of about 3 mV thanks to Somavedic Atlantik shows significantly better availability of electrons (compared to the reference sample). Reduction for 8 mV would already mean doubling the proportion of the reduced form at a total concentration of redox pairs, i.e. the ratio between the reduced form / oxidised form would change to 2:1 instead of 1:2.

RH2 values can be classified so that the values from 17 to 25 are considered to be inert (theoretical value of about 22), the values from 25 to 34 under slightly oxidising and values <28 for biologically tolerable.

The water samples showed rH2 values from 24.1 to 24.8 in the inert zone.

To sum it up, the value of tap water used for comparison were within the limits set by the drinking water regulation (conductivity, pH value) and in terms of redox properties (ORP, rH<sub>2</sub> value), they are already in the favourable zone.

## 6.2 Somavedic Atlantik impact assessment

In comparison with values of non-modified tap water, Somavedic Atlantik effect achieved:

- ❖ a slight decrease in conductivity,
- ❖ slight alkalization and
- ❖ a slight reduction of the redox potential,

which can be regarded as an improvement from today's biological point of view.

POLLACK talks about such changes as a result of increasing the coherence in water samples and explains the creation of hexagonal, polymolecular structures bearing hub (with an excess of electrons), wherein protons (particles of acids) divide themselves acquired as positively charged ions with an opposite mark.

As already explained, the redox potential decline results in greater availability of electrons that correlates with a negative overhubbed hexagonal structure of liquid crystals.

Chart 6 (next page): Bioelectronic terrain analysis of both samples (sample modified by Somavedic Atlantik and reference sample = non-modified tap water) in comparison with other tap waters and known mineral waters.