Towards General Experimentation and Discovery in "Conditioned" Laboratory Spaces,

Part II: pH-Change Experience at Four Remote Sites, One Year Later

by

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Abstract

Objectives: (1) To demonstrate information entanglement between separated sites of a single experimental system over distances of1500-2000 miles and (2) to provide experimental ΔpH(t)-data, above the theoretical value for conditioned spaces, over a long time period for these various sites.

Design: The same as Part I but with two additional control sites, 1500-2000 miles distant from any IIED site.

Setting/Location: The same as Part I but scientific laboratories for the two additional control sites.

Subjects: Three IIED sites plus five control sites.

Interventions: None.

Results: pH(t)-data variations with time, over a long time duration, for all sites.

Conclusions: Major information entanglement exists between IIED-sites and non-IIED sites, even at separation distances in excess of 2000 miles.

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Introduction

Our remote-site experiments began in November, 2001, and Part I of this series (Tiller et al., 2004) reported experimental aspects from the first 5-6 months of work at two sites, Kansas and Missouri, using a pH-increasing IIED (Intention Imprinted Electrical Device) at each main site (not at the "control" sites for each main site). In addition, some data from the Payson master site and its control site for the same time period was presented. It was found for these three pH-increasing IIED treatment sites, wherein the purified water in the measurement vessel was replaced on a two-week or shorter cycle (electrode recalibration cycle also) and continuous monitoring of both temperature and pH occurred, that the pH behavior with time was mostly of an exponential nature but sometimes of a linear nature; i.e., it conformed to either

$$pH(t) = pH_{Calc} + \Delta pH\,(1 - e^{-\beta t}) \tag{1a}$$

or

$$pH(t) = pH_{Calc} + \gamma t \tag{1b}$$

Here, pH_{Calc} is the conventional theoretical value based on temperature (for purified water in equilibrium with air at room temperatures, $pH_{Calc} \approx 5.66$), ΔpH increases with IIED treatment time, approaching 1 pH unit at long conditioning time while, β and γ are both site and treatment-time dependent. At small pH values, Equation 1a becomes Equation lb with $\gamma = \beta\Delta$□□. In addition, at supposed "control" sites located miles away and with no IIED present, a similar functional behavior to Equations 1 was observed although with mostly smaller ΔpH-values. These two observations, plus a variety of less well-defined data signatures suggested that some kind of presently unknown "information entanglement" process was occurring between the Payson Laboratory and all the remote sites.

The next two remote sites were selected to be located at Baltimore, MD (B_2) and Bethesda, MD (B_1) and, to investigate this postulated entanglement process a little, it was decided that, after setting up the pH-monitoring equipment with water change and electrode recalibration cycles as at the M and K sites, background monitoring without the presence of any IIED would take place for a period of several months. In addition, the biweekly data from these two sites would be shipped to the Payson lab for analysis on diskette via the U.S. Postal Service rather than by e-mail in order to minimize obvious sources of possible information entanglement. After some months of this type of baseline pH and temperature-data gathering, unique IIEDs for individual target experiments favored by the site-host were installed at each remote site (with installation date and re-imprinting date noted on the $\Delta pH(t)$-plots. As an aid to perhaps help our understanding of the information entanglement process, similar plots over the same time-frame are provided for the Payson laboratory site.

Experimental Procedures and Results

These procedures have been fully described in Part I of this series (Tiller et al., 2004). The various sites involved in this overall study are given in Table 1 and the figures plot the $\Delta pH(t)$ data above pH_{Calc} from either Equation 1a or Equation 1b at either t = 72 hours or 1 week or both. $\Delta pH(t)$ data for both 72 hours and 1 week are provided in the majority of cases to reveal (a) time differences or similarities and (b) that in some cases incomplete data collection occurred.

For the Missouri (M) and Kansas (K) sites, this data involves both IIED sites, M_I and K_I, plus control sites, M_C and K_C. Further, for M_I the clinic was sold 8 months after the experiment began and a new IIED site initiated in the home of a nurse so M_I will be designated as M_{I1} for the first 8 months and as M_{I2} for the immediately following period. In addition, besides reimprinting of pH-increasing IIEDs on a ~3 - 6 month cycle, additional IIEDs of special types were introduced to "tune" the already partially conditioned space for special target experiments: (1) $(IIED)_{FR}$ refers to an experiment in the reduction of free radicals in the bodies of human subjects exposed to this space, (2) $(IIED)_{CS}$ refers to an experiment which doubles the Ca^{++} ion sparking rate in the cells of excised rat heart muscles while (3) $(IIED)_{IS}$ refers to an experiment to significantly increase interleukin-6 secretion rate in a special cell line.

Table 1: Measurement Site Designation Labels

		Comments
P_1	Payson Lab, ASTM-I water	
P_2	Payson Lab, ASTM-I water + 0.4% Silica Gel	Exponential pH-increase not observed
P_3	Payson Lab, ASTM-I water	
P_4	Payson Lab ASTM-I water	
P_5	Payson Main Street Site, ASTM-I water	
P_6	Payson Garage Site, ASTM-I water	Exponential pH-increase not observed
K_1	Kansas IIED Site	
K_2	Kansas Initial Control Site	
K_3	Kansas Final Control Site	
M_1	Missouri IIED Site	
M_2	Missouri Initial Control Site	
M_3	Missouri Second Control Site	
M_4	Missouri Final Control Site	Linear & Exponential pH-increases
B_1	Bethesda	
B_2	Baltimore	

Missouri (M) Site: Figures 1a to 1c provide the ΔpH data for M_{I1} , M_{I2} and M_C, respectively. As expected, one finds that the ΔpH-value reaches a maximum at ~3 months and then begins to decline in a somewhat oscillatory fashion back to baseline. One interprets this behavior to mean that, for this site, three months appears to be the effective imprint lifetime for this particular device so that reimprinting should have occurred on a three-month cycle. Figure 1b indicates that, when the equipment was transferred to the new site with a newly reimprinted IIED, ΔpH was immediately substantially higher than the last data point at the former site. This ΔpH-value oscillated a bit but remained fairly high throughout the entire period that the IIED remained in the "ON" state. At the end of a 2-month period, this pH-increasing

IIED was removed and stored in an electrically-grounded Faraday cage. Shortly thereafter, a new free radical reduction treatment IIED was turned on in the space for a later experiment. One notes that the ΔpH values stayed high for ~ 1.5 months after removal of $(IIED)_{pH}$ before decaying fairly rapidly to ~background values.

The data gathered at M_C (M_4 in Table 1) is remarkable in that ΔpH begins to rise substantially somewhat after the M_{I1} data begins to fall. It then reaches a ΔpH-value of ~ 1.7 pH units, almost a factor of two higher than the imprint intention for the IIED, in early June when ΔpH for the M_{I2} site was at a very low value. Although ΔpH for the M_C-site declined thereafter, it remained higher than the values of the M_{I2}-site. These results plus significant pH oscillations as well as both large amplitude air and water temperature oscillations suggest that this site has special properties not characteristic of most of the remote sites.

<u>Kansas (K) Site</u>: Figures 2a and 2b provide the ΔpH data for K_1 and K_C (K_3 from Table 1), respectively. One notes that, for the K_1 site, (1) the values oscillate with a period of ~2months, (2) a ~10 month average value was ~0.6 pH units and (3) relatively high values were sustained for ~3-4 months after the pH-increasing IIED had been turned off and stored in an electrically-grounded Faraday cage. For the "control" site, the third one to be tried, which was in a house ~0.5 miles away from the IIED site, Figure 2b shows a strange behavior with the data exhibiting relatively small long term variations between negative and positive values. The gaps in the ΔpH data reflects incomplete data gathering during these intervals and are usually related to equipment malfunctions.

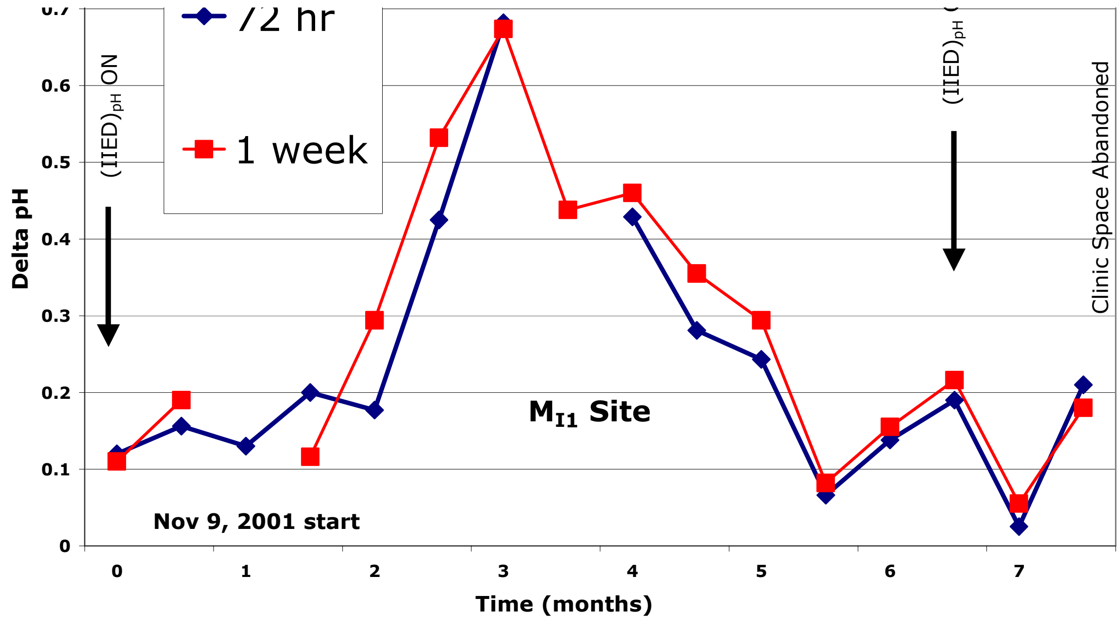

Figure 1a. ***Delta pH vs. time for the Missouri site exposed to a pH-increasing IIED. A Delta pH of zero would be expected if there was no IIED effect.***

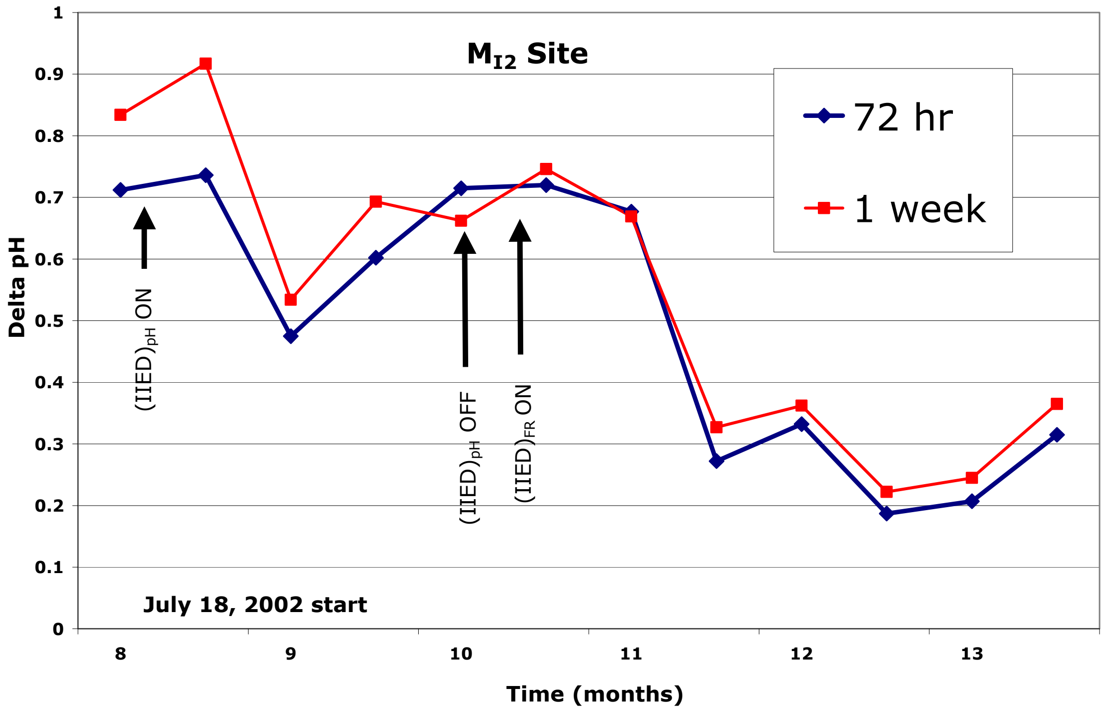

Figure 1b. ***Delta pH vs. time for site M_{I2} also exposed to a pH-increasing IIED. A "free-radical" experiment IIED was turned on at 10 months, not long after the pH-increasing IIED was turned off.***

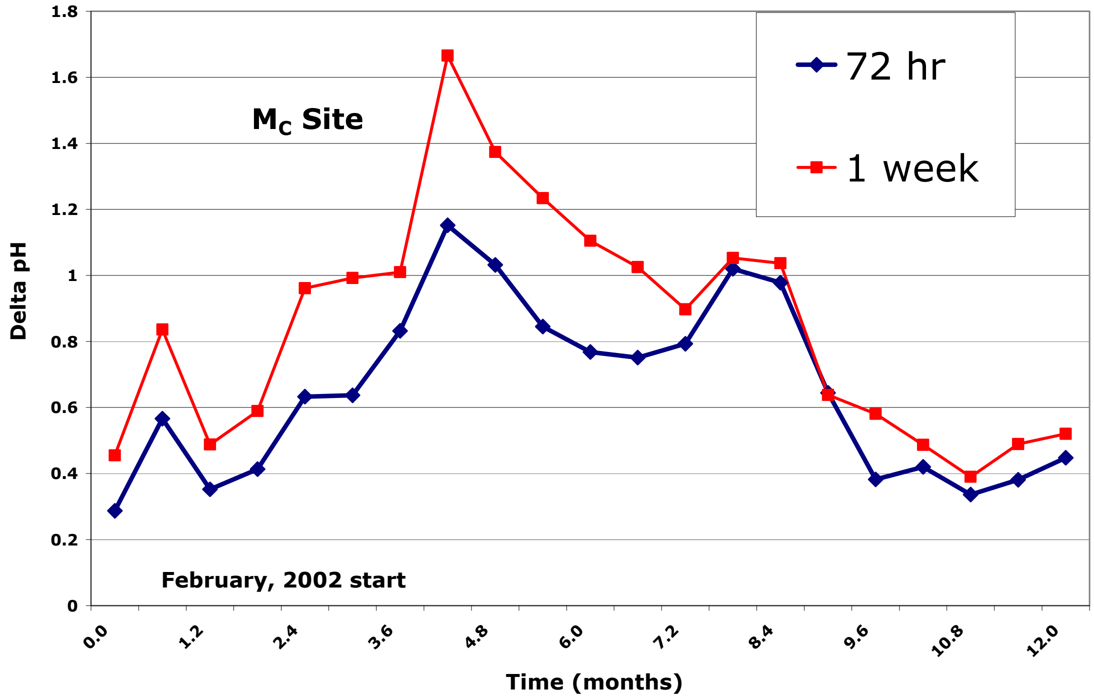

Figure 1c. *Delta pH vs. time plot for site M_C that was never exposed to any IIED.*

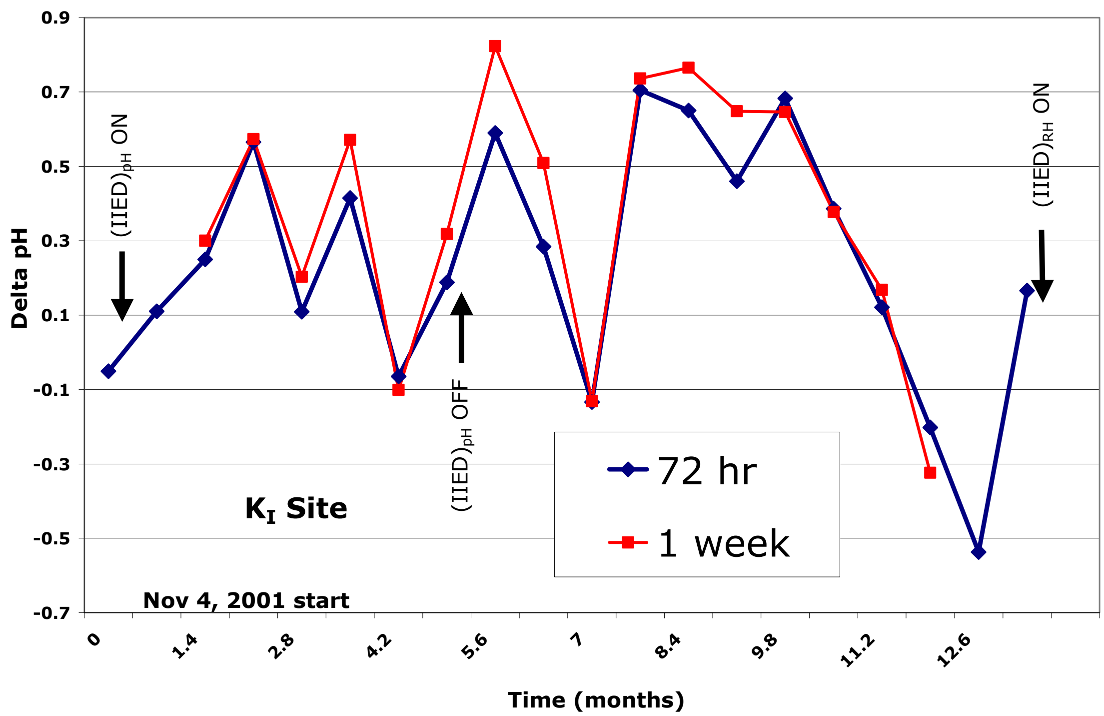

Figure 2a. *Delta pH vs. time plot for the Kansas site, K_I, that was exposed to a pH-increasing IIED.*

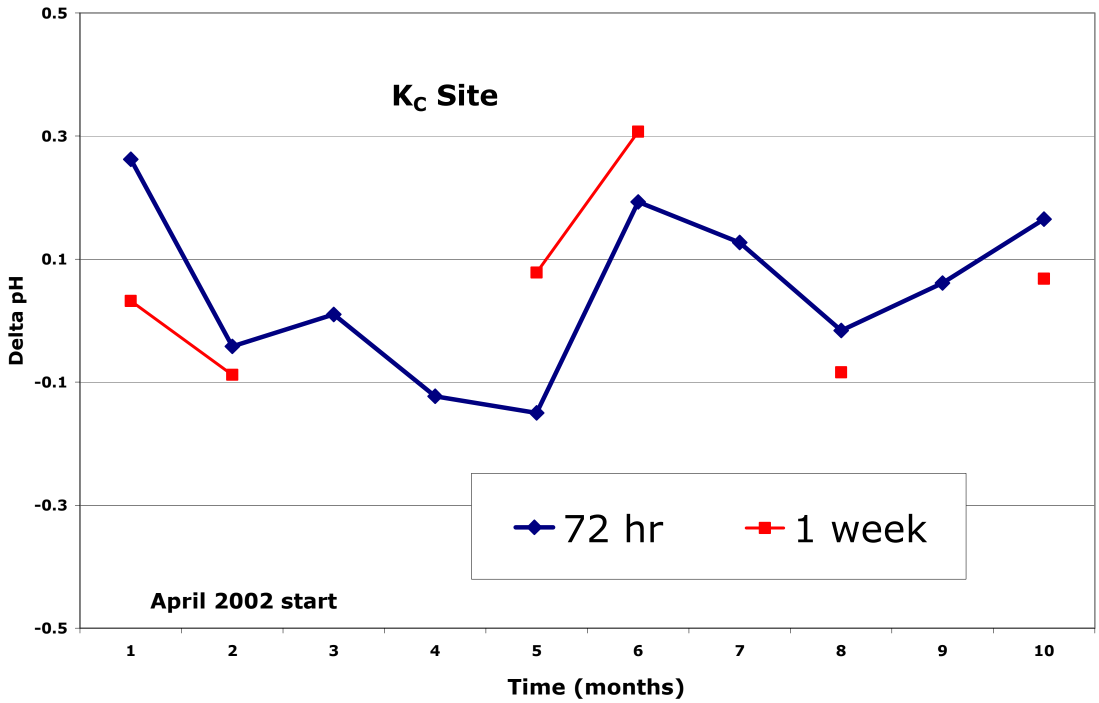

Figure 2b. *Delta pH vs. time plot for site K_C that was not exposed to an IIED.*

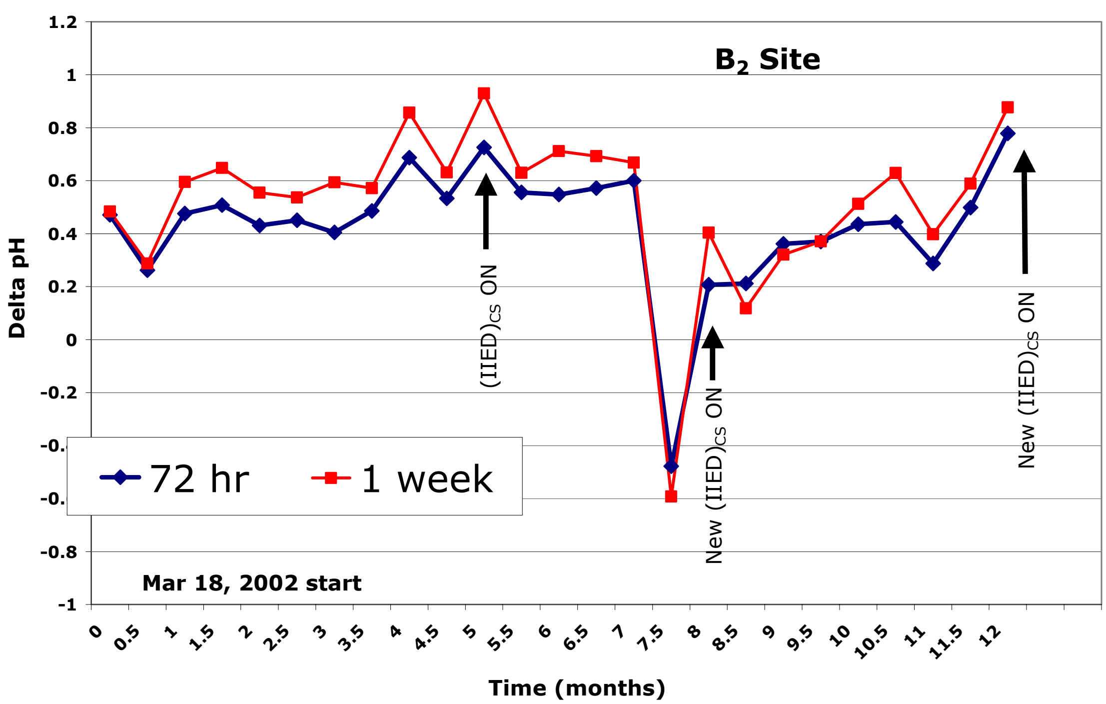

Figure 3a. *Delta pH vs. time plot for site B_2.*

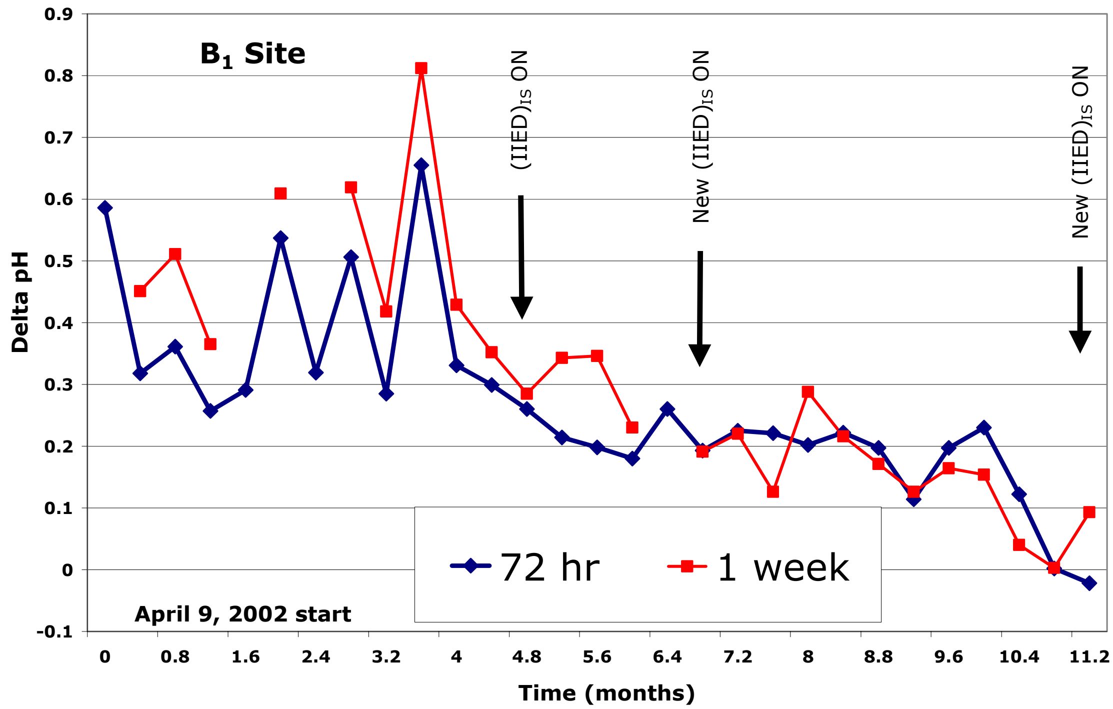

Figure 3b. ***Delta pH vs. time plot for site B_1.***

Baltimore (B_2) and Bethesda (B_1) Sites: Figures 3a and 3b provide the ΔpH data for the B_2 and B_1 sites, respectively. From Figure 3a, one notes that the ΔpH values achieved and maintained levels of ~0.6 pH units for ~ 7 months followed by a sharp drop to strongly negative values before slowly (~3 months) recovering to the +0.6 ΔpH unit level. Over the same time frame, Figure 3b exhibits a much more fluctuating behavior with average ΔpH values for the first 3 months being in the ~0.5 pH units range followed by a slow decay over the next 6 months to values close to zero. The most important point to notice here is that neither site had any type of IIED present and turned on for the first ~5 months of these data streams. Thus, one presumes that they have become information entangled with other sites of the overall system.

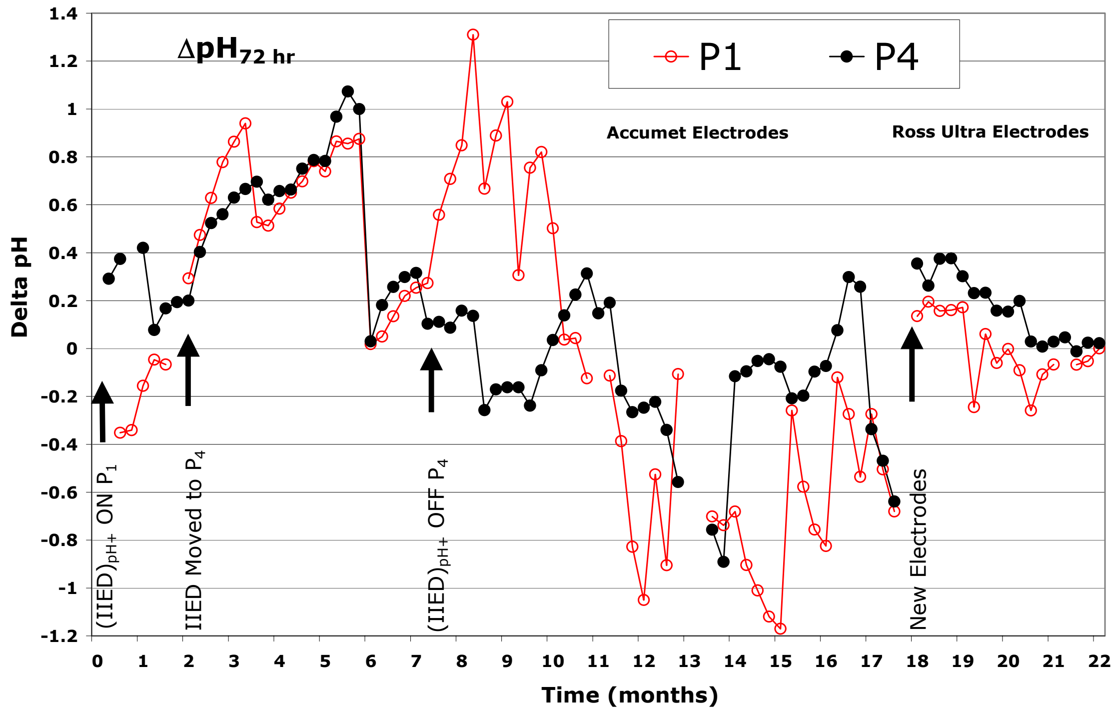

Figure 4a. ***Delta pH vs. time plots for sites P_1 and P_4.***

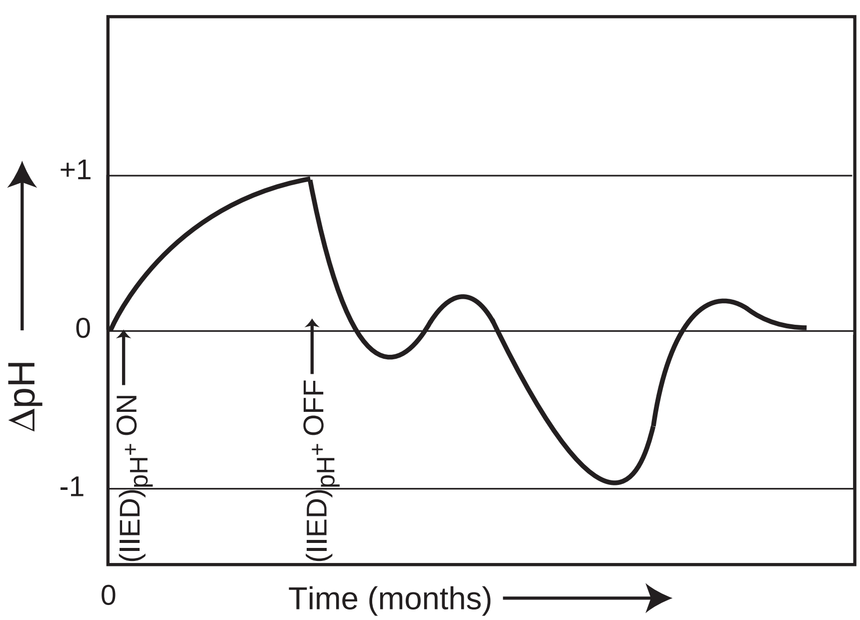

Figure 4b. ***Schematic Delta pH plot for a general station in the Payson lab.***

Payson (P) Site: To provide background ΔpH data from the master site, Figure 4a displays $(\Delta pH)_{72\,hr}$ data from two of the four pH-monitoring stations in the laboratory, P_1 and P_4. From the qualitative representation of this data illustrated by Figure 4b, one sees both a characteristically rising ΔpH segment associated with turning on a pH-increasing IIED in the laboratory followed by a type of polarization response associated with turning off this IIED. The fine structure details of Figure 4a are somewhat different for the two sites but the general trends are the same. In addition, abrupt upward shifts occurred for each site when the pH-monitoring electrode was changed from the Fisher® Accumet (Fisher Scientific, 2000 Park Lane Drive, Pittsburgh, PA 15275, www.fishersci.com) type to the ThermoOrion® Ross electrode type (Thermo Electron Corporation, 500 Cummings Center, Beverly, MA 01915, www.thermoorion.com).

Discussion

The unique new findings displayed in the experimental section can be summarized as:

1. The two remote pH-increasing IIED sites, M_C and K_C, exhibited significant ΔpH magnitudes, with some downward fluctuations that are probably associated with an experimenter effect or a human interaction effect (especially for the K_1 site (see Figure 2a)).
2. There is some evidence that ~3 months is the optimum imprint lifetime before

device reimprinting is needed (see Figure 1a). However, the K_1 site data indicate that beneficial human interaction effects can appreciably increase this effective lifetime while the P_1 site data reveals strong evidence for a vacuum polarization effect as well as an electrode-type effect.

3. All the control sites exhibited various degrees of pH-entanglement with the IIED sites. This new phenomenon is especially supported by data from the B_1 and B_2 sites which are located ~1000-2000 miles away from the various IIED sites.

From item #1 above, one can conclude that replication by others, of the original Minnesota laboratory data on increasing water pH via a suitably imprinted IIED, has been achieved provided the remote-site investigators follow the protocol outlined in Part I (Tiller et al., 2004) of this series. As pointed out in earlier work (Tiller et al., 2001a), creating and maintaining a high state of conditioning in a particular space involves several factors, (1) the specific nature of the space itself, (2) the imprint charge level of the IIED being utilized, (3) the state of potentization of the particular equipment involved and (4) the state of internal coherence and actions of the humans occupying this space. Item (1) is very much involved in the ΔpH distinction between the K_C and M_C sites. Item (2) was revealed at the M_I site after ~ 3 months. Item (3) was revealed at the P_1 and P_4 sites via Figure 4a while item (4) is probably the explanation for the oscillatory behavior of the Figure 2a data from the K_1 site.

Besides the data reproducibility factor at remote sites, perhaps the most remarkable phenomenon to be revealed by this investigation is the information entanglement effect between non-local sites of the overall experiment. Here, one needs to be very clear that this classical information entanglement is very different than quantum entanglement. In quantum information science, groups of two or more quantum objects can have energetic states that are entangled and these states can have properties unlike anything in classical physics. In classical information science, a familiar example is a string of bits, encoded via real physical objects like the spin of an atomic nucleus or the polarization of a photon of light, but abstractly represented by 0's (down state) and 1's (up state). A qubit, the quantum version of a bit, has many more possible states which entail both of these primary states but to varying degrees (Nielson 2002). In the theoretical model that we use to explain the present work (Tiller and Dibble, 2004), quantum considerations are not necessary. What is necessary is that we classically expand our reference frame (RF) for viewing nature from a single 4-space, (x, y, z, t), to a biconformal base-space RF that consists of two, 4-dimensional, reciprocal subspaces, one of which is spacetime, and all of this is imbedded in several higher dimensional spaces. Thus, our biconformal base-space (BCBS) takes on an 8-dimensional character, $\{ (x, y, z, t) : (x^{-1}, y^{-1}, z^{-1}, t^{-1}) \}$. Recognizing that x^{-1} represents a number per unit distance which we can label as a spatial frequency, k_x, and t^{-1} represents a number per unit time or a temporal frequency, k_t, this BCBS is more meaningfully represented as $\{ (x, y, z, t) : (k_x, k_y, k_z, k_t) \}$. Such a BCBS provides us with (1) both the particle and wave behavior of substance, (2) both local and non-local forces, (3) connectedness of an object at a specific point in spacetime with an object at any other specific point in spacetime, (4) a mathematical linkage between the quality of an object in spacetime to the conjugate quality of the object in the reciprocal subspace and vice versa, etc.

It is properties (3) and (4) that can be quantitatively utilized to account for the information entanglement effect reported on here and the key issue becomes one of "defining the experimental system". The first important step is to recognize that, for our chosen BCBS RF, the magnitude of any instrumental measurement has a contribution that comes from each subspace. Thus, if Q_M is the experimental measurement, Q_M is equal to the sum of Q_D (from the (x, y, z, t) domain) and Q_R (from the (k_x, k_y, k_z, k_t) domain. The second important step to recognize is that, since the latter domain is a wave domain, Q_R is given by the integral of the amplitude squared, $R^2(k)$, over this entire domain. The third important point to recognize is that, if your experimental system contains just two spaces (an IIED lab space and a "control" lab space), one must first superpose the wave amplitude spectrum, $R_I(k)$, for the one space with the wave amplitude spectrum, $R_C(k)$, for the other space before approximately mathematically squaring the result and then integrating. This boils down to integrating the quantity, $[R_I^2(k) + R_C^2(k) + 2R_I(k)R_C(k)\cos(\theta_I - \theta_C)]$ over the entire wave domain. Here θ_I and θ_C are the phase angles (functions of k) for the I and C spectra, respectively. Now, the first two terms are what one would have if I and C are completely isolated from each other (totally unconnected); however, because they are always connected in our particular BCBS RF, we have the third term and this term is the one that always gives us information entanglement.

To illustrate this new principle, let us consider just three examples.

A. Let us consider a medical doctor conducting a treatment/placebo on N subjects. In an overly simplistic description, our system can be considered to consist of just 3 parts, (1) doctor (D), (2) treatment (T) and (3) placebo (P), thus, the information entanglements from the wave domain part of the whole, Q_R, arise from the terms in the cross products $R_D R_T$, $R_D R_P$ and $R_T R_P$. From this, one can deduce that the magnitude of the placebo effect will be directly related to the magnitude of the treatment effect. The full mathematical treatment of this oversimplified example is much more complex but the qualitative entanglement concept holds true.

B. This perspective is broadened when we consider the EEG experiments of Reference 8. Here, two humans (A and B) are wired up for EEG monitoring and placed in rooms some short distance apart. Light stimulation on the closed eyelids of one subject, A, produced a readily distinguishable signature in A's brain waves. Such a signature was also looked for in the brainwaves of subject B, but it was not found. However, when subjects A and B were first allowed to meditate together (side by side) for ~10 minutes before the EEG experiment was repeated, then the special EEG signature was observed in B's brainwaves when A's closed eyelids were light-stimulated. Here, one sees that a special kind of linkage procedure was needed between A and B for the information entanglement effect between them to manifest.

C. It should also be noted that earlier experiments (Tiller et al., 2003) showed the human acupuncture meridian/chakra system to have the same type of elevated electromagnetic gauge symmetry state as a "conditioned" space so that meditating together would have enhanced the A-B connectivity.

Our perspective on "the system" is broadened when we consider the famous double slit experiment for electrons. It is well known that, in the classical experiment when one has no knowledge of which slit any single electron will go through, a well-defined diffraction pattern exists on the screen behind the slits. This is to be expected because the "system" is two slits with electrons so they interfere with each other via an A□-type of entanglement. However, when photons illuminate the electrons so that one has information regarding which slit a particular electron will go through then, for such electrons, the "system" is only a single slit and one observes a strong intensity contribution on the screen only directly behind the two slits. We thus see how careful one must be here in <u>defining what constitutes the system</u>.

To sum up the overall findings of this remote sites study one can conclude for our original pH-enhancement studies (Tiller et al., 2001b) that reproducibility by others has been satisfactorily achieved, provided we supply the IIED. It would be interesting to see if others can also prepare satisfactory IIEDs for this type of study. Further, one can also conclude that at least one type of new energy form is active in the achieving of this experimental data because it has produced very long-range information entanglement between IIED-sites and control-sites. This result has profound implications for the usefulness and efficacy of remote-healing modalities. However, this new information entanglement heralds the future demise of standard double-blind experimental studies because of such non-local entanglement (both spatial and temporal) between the various distinguishable parts of the total experimental system. Those readers who have a tolerance for mathematics can learn more about the theoretical side of this work by accessing our website (Tiller and Dibble, 2004).

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