

## Magnetic Fields from Water Pipes



Every paranormal investigation is a new adventure. Generally, a good investigator measures the EMF fields in every room, at selected appliances, and around the outside property. Whether one performs a comprehensive contour or spot measurement survey, the process is rather straightforward: measure and record the magnetic field levels, note significant levels, identify sources, establish your base readings for each room. The magnetic fields from nearby electrical power line sources (transmission, distribution, and service) are easy to measure and identify. Appliance sources usually jump right out of the display as you walk by. But magnetic fields from plumbing and ground currents can mystify and perplex the most experienced investigator. If there is an elevated magnetic field near a metal water pipe, especially next to the shut-off valve at the point of entry, then plumbing currents are probably the source. Horizontally polarized magnetic fields perpendicular to the water pipe axis radiate out from the pipe diminishing in

magnitude at a linear 1/r rate. The current on the pipe can be calculated as follows:

$$I_{\text{amps}} = .15(B_{\text{mG}})(R_{\text{feet}}) \text{ where } B_{\text{mG}} \text{ is magnetic flux density in milligauss.}$$

However, it is much easier to use a clamp-on amp meter around the water pipe, preferably near the entry point.

In a residence the typical plumbing current measures between .25-2.5 amps, depending on the local neighborhood electrical conditions. Place the clamp-on meter around the water pipe and monitor the current which normally fluctuates (sometimes dramatically) over several minutes. Be sure to note this in your base readings and brief your team. This is a dramatic source of EMF that are false readings. Additionally, notify the client and the local power company should be notified if the external plumbing current exceeds 3-4 amps.

Plumbing currents can migrate from the water pipes into HVAC ductwork, metal conduits, BX metal sheaths, and grounded equipment housings (sink disposal, coffee machine, etc.) emanating magnetic fields everywhere. To eliminate an external plumbing current source, a licensed plumber must install a high-quality dielectric coupler a few inches from the water meter near the street.