



## ***Panhandle Eastern Hopeton Plant Spill*** *Reduction of chloride levels and total soluble salts*

The area outside the tank battery on the plant had been contaminated with multiple barrels of salt water, and the ground was tested on March 2, 2007 with chloride levels as high as 38,515ppm.

### **Basis of Treatment**

Byo-Soil (SB-1) is a 100% natural patented, propriety humified soil extract which contains a pharmaceutical-grade humate molecule and nine essential soil microbes and essential enzymes. The product performance is accelerated with Byo-Gon biostimulant. The high cation exchange capacity of the humified soil extract molecules in Byo-Soil (SB-1) attaches the salt ions to the carbon chain through a chelation bonding process. The microbes and enzymes ensure the breakdown of the Na-Cl bond and catalyze the permanent, ionic bond to the organic molecule. Microbes and enzymes break portions of the organic chain with resulting ionic bonds becoming encapsulated within the organic structure. Byo-Gon biostimulant speeds up the rate and efficiency of the biological portion of the process. This product does NOT reposition salt, it eliminates it in a much quicker and more cost effective manner than other remediation options.

### **Treatment**

The patches of soil (the spill ran down like a creek) were then treated with SB-I on June 6<sup>th</sup>, 2007. The product was allowed to work until July 27<sup>th</sup>, 2007 and samples were taken from the same spots of the spill as before and tested on July 30<sup>th</sup>, 2007. The chloride levels and total soluble salt levels (ppm) of each were tested and are listed below;

<b><u>March 2, 2007 pre-treatment</u></b>	<b><u>CHLORIDES</u></b>	<b><u>T. SOLUBLE SALT</u></b>
West sample	38,515	87,600
East sample	19,000	43,200
<b><u>July 27, 2007 post-treatment</u></b>	<b><u>CHLORIDES</u></b>	<b><u>T. SOLUBLE SALT</u></b>
West sample	250	1,850
East sample	650	2,550

As you can see from the above data, the chloride contribution from the liquid was not only neutralized, but was reduced over 99% in the west sample. And the TSS levels were reduced as much as 98% in just the short time between treatment and sampling, and both were reduced to acceptable levels.