

# ENVIRONMENTAL NEWS

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## THE CHAIR'S COMMENTS

THEY SAID IT COULDN'T BE DONE, BUT Jim Kuszaj did it—that is, caused me to virtually run out of words. By putting our newsletter out every other month, he's seriously stressing my ability to come up with new news for you, but I'll toss out a couple of tidbits.



**ROBERT R. GELBLUM**

The first thing I'll note is something about the newsletter. One reason almost all of you are receiving this electronically relates to the survey you hopefully responded to in the first half of January. It asked about your preferences regarding receipt of the newsletter. Eighty of you expressed no objection to receiving the newsletter electronically, three objected, and 28 voted for receiving as many as we can afford by mail and the rest electronically. Thus, we are going with what happens to be the NCBA's flow anyway for all sections, that is, moving to mostly electronic publication of our newsletter, with "snailmail" transmittal still an option for those opposed.

I think it's fair to say we had a quite successful council meeting on Jan. 16, due in no small part to the talk given as the meeting's program component by DENR Secretary Bill

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## Just Exactly Where is That Petroleum Contamination Coming From?

BY JAMES W. BRYAN

YOUR CLIENT, A CONVENIENCE MART AND gasoline station company, just received a letter from the North Carolina Department of Environment and Natural Resources (NCDENR) holding the company responsible for violations of water quality standards due to a leaking underground storage tank (UST).

NCDENR demands a comprehensive site assessment (CSA) and then a corrective action plan. The letter identified high concentrations of benzene, toluene, ethylbenzene and t-xylene (commonly referred to as BTEX constituents) and methyl tert butyl ether (MTBE) as having been discovered in an initial site assessment performed on behalf of NCDENR. Your client denies being the source of the contamination.

The convenience store is at a busy intersection in suburbia, North

Carolina, with two competitor businesses selling gasoline there, too. Your client has no history of spills or leaking USTs but the competitors do.

Your client wants your advice. Here are some points to consider.

### Laboratory Results

The analytical report from the laboratory showing high BTEX and MTBE levels is the proverbial smoking gun. How accurate is it?

**a) The Laboratory.** If a commercial lab performed the analysis, you should check whether the lab is properly licensed by NCDENR and has followed the established protocol for analyzing the groundwater samples. If the laboratory is a state laboratory such as the State Division of Water Quality

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Chemistry Laboratory, the same question about protocol needs to be asked, as well as whether the state lab has been certified by any other entity such as the USEPA to do analytical work for environmental compliance purposes.

A mobile laboratory may have performed the analysis. Mobile labs should be used only as a screening tool because the data generated is not as reliable. If NCDENR is relying on mobile lab data as confirmation of contaminants in groundwater, your client should not accept the data as the gospel truth. Ask more questions.

b) **Reading the Lab Report.** On the lab's analytical report, you may see footnotes next to the constituent concentration levels, such as "T" which means "tentatively identified, not confirmed" and "E" which means "estimated value." These designations can cast doubt on the validity and accuracy of the concentration levels. The comment section of the analytical report may note that the lab received the water samples outside the requisite holding time or that the samples did not properly contain preservatives. Also vapors from high concentrations of constituents in water sample containers (from unrelated sites) may have migrated to and contaminated the water sample containers from your site in the lab's storage cooler.

c) **MTBE.** The analytical results on MTBE need to be scrutinized. MTBE was designed as a replacement for lead in gasoline in order to reduce air pollution from auto emissions and has been in use since about the 1980s. If your client's UST leaked gasoline in the past 20 years, chances are good that MTBE will be detected in the laboratory samples. However, the accuracy and precision of the methods used for measuring the MTBE should be investigated.

MTBE is known to travel quicker in a groundwater plume than hydrocarbon constituents such as benzene and toluene but it also pulls the hydrocarbons with it. The presence of such hydrocarbons has been known to cause false-positive detections of MTBE. Plus, arguably the best method used for MTBE analysis is EPA Method 8260 (Volatile Organic Compounds by Gas Chromatography with Mass Spectrometry), but quite often the lab may utilize another EPA method which does not involve mass spectrometry and which is less expensive. You may put in a temporary monitoring well, test the water in it and find no MTBE at all. Believe it or not, this can occur.

### **Geoprobe**

The site assessment performed on behalf of NCDENR may have obtained its water samples by means of Geoprobe sampling points throughout the site. Geoprobe data can be a useful tool to locate permanent monitoring wells but it is risky to rely on the data as final confirmation of contaminants. The data is not reproducible—a Geoprobe is not a permanent monitoring well, nothing is left in the ground afterwards.

The quality of the water sample may depend on whether the water is obtained by means of a baler, peristaltic pump or foot valve. Some water samples may have

been more turbid than others, which would adversely affect the accuracy of the lab results. The USEPA is known to not accept Geoprobe data for remedial action plans. If there is no monitoring well data to back up the Geoprobe data, your client should demand greater proof before giving up.

### **Water Supply Wells**

NCDENR may have obtained analytical results from water supply wells in the vicinity of your client's busy intersection. It is risky to rely on data from water supply wells. The type and quality of well construction, as well as the depth of the well, are often unknown. Some wells may have been tampered with by the well owners, and others may have had something dropped down inside.

If MTBE was detected in Geoprobe samples from your client's property, logically MTBE should also show up in the water supply wells nearby because the wells pump groundwater toward the well and MTBE is often at the leading edge of the constituent plume. But if MTBE was not detected in area water supply wells, either the well data is suspect or the Geoprobe data is suspect.

### **Monitoring Wells**

The location, number and type of monitoring wells are critical components of a site assessment. A contaminant plume cannot be adequately delineated horizontally and vertically without enough monitoring wells. But such wells are costly to install and maintain and often an initial site assessment contains too few of them. It may be too tenuous a causal link for NCDENR to have concluded that contaminants detected in one well are part of a plume detected in the next well 100 feet away. Though easy to infer a causal link, would the inference satisfy evidentiary standards in the courtroom?

Deep wells in fractured bedrock may produce water contaminated with BTEX but who is to say that the petroleum constituents came from your client's site and not from the competitor's site next door. Water in fractured bedrock could have come from anywhere. Lab results from shallow surficial aquifer wells may show wildly fluctuating constituent levels which make no sense, or may show a completely different constituent such as a chlorinated solvent which has no connection to petroleum.

### **Groundwater Flow Direction**

The determination of shallow groundwater flow direction can make or break a case. If groundwater 25 feet below ground flows to your client's site from the competitor's site and NCDENR detected contaminants in the shallow monitoring wells on your client's property, it is clearly within the realm of possibility that the contaminants came from off-site. But what if NCDENR believes the groundwater flow goes in the opposite direction, which implicates your client?

The flow direction determination may be suspect if the water samples were not taken during different seasons throughout the year. Although surficial groundwater often

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# Court of Appeals Upholds State Wetland Rules

BY TRIPP VAN NOPPEN

THE NORTH CAROLINA COURT OF APPEALS RULED ON DEC. 31, 2002, that the Environmental Management Commission has statutory authority to adopt water quality classifications and standards governing the state's wetlands. The case is *In re: Request for Declaratory Ruling By the Environmental Management Commission*.

In a unanimous decision, the court rejected arguments by several business organizations that the commission lacks authority to adopt regulations protecting wetlands and that the regulations were improperly promulgated.

The EMC adopted rules in 1996 defining wetlands, classifying and designating uses of wetlands, and setting forth the procedures for 401 certifications associated with Section 404 wetland permits. The substantive challenge to the rules was based on an argument that the statutory definition of "waters of the state" which the EMC is empowered to protect does not extend to wetlands. The court held that wetlands are "waters of the state" as defined by N.C.G.S. 143-212(6) and therefore that the EMC has authority to establish classifications and standards. The court also rejected a pro-

cedural contention that provisions of the rules impermissibly differed from the draft rules on which the public commented.

This decision leaves intact the state's wetland protection program. The significance of the decision is greatly enhanced by the impact of recent federal court decisions limiting federal jurisdiction over isolated wetlands, along with the current federal proposal to rewrite the Clean Water Act jurisdictional rules. Some other states have refused to extend state protection of wetlands beyond the scope of federal jurisdiction, while North Carolina's rules cover isolated wetlands.

The Court of Appeals decision in *In re: Request for Declaratory Ruling by the Environmental Management Commission* is available at [www.aoc.state.nc.us/www/public/coa/opinions/2002/020099-1.htm](http://www.aoc.state.nc.us/www/public/coa/opinions/2002/020099-1.htm).

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follows the contour of the land, groundwater flow direction does fluctuate from season to season. Some surficial wells may be screened off at different levels than other wells. This could mean the flow data came from different water bearing zones and flow direction cannot be measured with precision.

There may be a shortage of hydraulic conductivity data developed between the surficial aquifer and bedrock aquifer, which shortage can impact on flow determinations. Pumping from nearby water supply wells may influence the groundwater flow direction—such pumping can cause groundwater to flow upgradient. The topographical divide may run right through the intersection (it could be an old ridgeline from millions of years ago) and cause any accurate determination of flow direction to be next to impossible.

### Groundwater Elevation Data and Soil Borings

The location of groundwater elevation—the water table—can play a significant role in interpreting soil boring data. NCDENR may have detected BTEX constituents at 15 feet below ground in soil borings near your client's USTs, but if the water table fluctuates at that very location between 12 and 20 feet throughout the year, it is quite possible the contamination came from groundwater flow off-site and not from the USTs above. If the groundwater elevation data does not account for seasonal fluctuations, there is a hole in the data.

A gasoline tanker or hazardous materials railroad car may have spilled hundreds of gallons of contaminants on the ground 30 years ago at the intersection and the resultant contamination may be what is detected in the soil boring data. Groundwater elevation may have been determined through a combination of monitoring wells and water supply wells, but reliance on the water supply well data is risky due to the unknowns about each particular water supply well.

### Conclusion

In closing, your client may have a fighting chance. You need to ask the right questions. The notice-of-violation letter from NCDENR may have devastated your client but all is not lost. Your work has just begun. ■

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