



*Bethlehem Conservation Commission
Bethlehem, NH 03574*



September 29, 2008

Michael J. Wimsatt, P.G.
Director, Waste Management Division
Department of Environmental Services
P.O. Box 95, 29 Hazen Drive
Concord, NH 03302-0095

Subject: Type 1B and II Permit Modification Applications,
North Country Environmental Services Landfill, Stage IV
PHASE II, 581 Trudeau Road, Bethlehem, New
Hampshire/Permit # DES-SW-SP-03-002

Dear Director Wimsatt:

The Bethlehem Conservation Commission is asking the Department of Environmental Services to require additional water testing at the Trudeau Road landfill. Specifically we request testing for water quality parameters such as sodium, potassium, calcium, magnesium, ammonium, nitrate, sulfate, dissolved organic carbon and dissolved organic nitrogen.

In addition, we are asking that the pending permit be denied. We believe no permit should be considered until these additional tests are performed and sufficient time is allowed to analyze the results. (There is also the issue of the VOCs which have not yet been remediated.)

The aquifer beneath the landfill and the Ammonoosuc River are affected by nutrients such as ammonium (NH₄), nitrate (NO₃) and phosphate (PO₄), as well as organic matter (dissolved organic carbon and nitrogen) that can come from landfill leachate leakage.

Our concern is that by focusing the testing solely to pick up volatile organic compounds (VOCs) – as is the case currently – it will not be possible to get to the bottom of whether the landfill liner is leaking as many suspect. Verifying the state of the existing landfill liner should be of paramount concern before authorizing further landfill construction. The point is to use the less exotic contaminants, which can affect ecosystem health, that may be leaking from the landfill even though the exotic contaminants are not found. There is more to water quality protection than exotic contaminants.

This request for additional testing is based on a report we had done last year by Professor William McDowell and a conversation I had with him recently. Prof. McDowell is Professor of Water Resources Management in the Department of Natural Resources

and the Environment and Director, NH Water Resources Research Center at the University of New Hampshire.

Last year we commissioned him to evaluate the April 2007 water-quality report based on samples taken from test wells at the North Country Environmental Services facility on Trudeau Road.

As you know, that report found some higher-than-normal levels of volatile organic compounds (VOC) as well as VOCs where they had not been found before. The New Hampshire Department of Environmental Services was concerned enough that on July 31st it sent a letter to NCES informing the company that a remediation plan was necessary.

The conservation commission thought it would be a good idea to have an outside expert evaluate the April report and provide an independent opinion on the seriousness of the problem.

He had several concerns with the water quality report findings that led DES to request a remediation plan from NCES. At that time I did not understand the importance of some of his observations and concerns.

I want to be clear that Prof. McDowell is not critical of the current testing that is done by Sanborn, Head & Associates. He makes it clear that testing for VOCs is necessary. It is just that he thinks it may not be sufficient and says that these additional tests are not particularly expensive to include.

One area of concern is "the electrical conductivity value of MW 402U is much higher than the others." The other area of concern is "the results from SW 04, the spring called S-108 are striking."

Professor McDowell said the high electrical conductivity value of MW 402U indicates that some dissolved material is at very high concentrations at that site. The contaminant could be of natural origin, or road salt. Alternately, it could be due to organic acids produced from the decomposition of garbage. He said it's curious and -- while not necessarily cause for concern -- it would be good to know what the source of the high conductivity is. He said: "Let's say that the high conductivity in the monitoring well is due in fact to organic acids, decomposition of garbage, that means that the landfill leaks."

About the spring called S-108, he said the data suggests that this spring is discharging very old, oxygen-poor water, or oxygen-poor landfill leachate that, for whatever reason, does not have concentrations of trace organics above detection limits. This means that the high iron and manganese could be due to natural processes or it could mean that the liner is leaking. He said: "I'm not saying that it is leaking but they spend a lot of money doing analysis on the trace contaminants, why not spend a little bit more and just look at some of these clues to whether the thing is functioning well."

He suggested testing for water quality parameters such as sodium, potassium, calcium, magnesium, ammonium, nitrate, sulfate, dissolved organic carbon and dissolved organic nitrogen. He said these are basic things that tell you about how the system is working and can tell whether there's a leak in the liner -- even though it doesn't show up as a contaminant, as a volatile organic compound.

Regarding this additional testing, he said the tests DES is requiring are good but may not be sufficient to determine whether the liner is leaking. The focus on regulated contaminants misses the big picture. "By focusing on just the contaminants, you lose a little bit of your ability to understand what's going on inside that landfill."

Right now water-quality testing focuses on hazardous contaminants, the kind of testing that tells us whether volatile organic compounds are present. That is good but there may be indications in the monitoring wells that suggest that the landfill liner is leaking that have nothing to do with esoteric contaminants that occur in very low levels.

Prof. McDowell said the contaminants that DES is testing for occur at very low concentrations-- or they don't show up half the time. So, even when there is a problem, they don't necessarily show up in concentrations high enough to measure. Therefore, the wrong conclusion can be reached. Reports can be saying there is no problem when there really is a problem -- a problem that could be identified by testing for other water quality parameters.

We would appreciate a written response to this letter. We have written two letters to DES in the past about this permit but never received replies.

Sincerely,



Cheryl Jensen, Chair, Bethlehem Conservation Commission, P.O. Box 189 (603-869-5453)

cc: Governor John Lynch
DES Commissioner Thomas Burack
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NH State Senator John T. Gallus
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