

Division of Science, Research & Technology
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Memorandum

To: Commissioner Bradley M. Campbell

From: Eileen Murphy, Ph.D., Director



Subject: Chromium

Date: March 23, 2004

On November 10, 2003, you charged scientists from my Division with reviewing the Department's current clean-up criteria for chromium. This was done in response to concerns voiced to you by the Hudson County community where most of the chrome ore processing residue waste sites are located. In response to your charge, we have identified some areas that, in my opinion, deserve further consideration by the Department.

- Analytical: the Site Remediation program currently accepts results of chromium analyses using a non-certified method. It has been recommended that the NJDEP-certified analytical method for hexavalent chromium be used.
- Interconversion of trivalent chromium to hexavalent chromium and site-specific chemistry: Due to the differing toxicity of chromium depending on its valence state (tri- or hexa-valent), it is vital to understand the interconversions of these two species. Investigation of this chemistry is needed.
- Concentration due to capillary action: Hexavalent chromium may concentrate on surfaces due to its solubility and transport in ground water. This phenomenon needs examination.
- Carcinogenicity of hexavalent chromium via ingestion: It has been suggested that this form of chromium, known to be carcinogenic via inhalation, may also induce cancers when ingested. This route of exposure needs further investigation.

Based on the concerns outlined above, I recommend that the Department convene a working group to examine the science of the issues. I propose that the group, comprised of experts from various programs of the Department, work intensively for a six month period of time and be charged with outlining details of the above mentioned issues for examination and making recommendations for your consideration. Further, I propose that the Department's group consult, as needed, with academic experts from state universities on specific questions related to the above issues.

I further recommend that it may be prudent that, during the period of time when the working group is examining these issues, the Department suspend issuance of No Further Action (NFA) letters on chromium ore processing residue sites. One option could be for the Department to use a level of 100

parts per million total chromium as a clean-up criterion during this effort, however, in my recommendation, it would be more prudent to suspend the issuance of any NFAs until the work group report is available.

If you have any questions regarding these recommendations, please do not hesitate to contact me.

cc:

Jeanne Herb, Director, Office of Policy, Planning & Science
Joe Seebode, Assistant Commissioner, Site Remediation & Waste Management
Tom Cozzi, Director, Remediation Management & Response



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MEMORANDUM

TO: Joseph J. Seebode, Assistant Commissioner
Site Remediation and Waste Management
Eileen Murphy, Ph.D.,
Director Science, Research and Technology

FROM: Bradley M. Campbell, Commissioner

DATE: March 23, 2004

SUBJECT: Chromium

A handwritten signature in black ink, appearing to read "Brad", positioned to the right of the "FROM:" line.

I have reviewed Eileen Muphy's March 23 memorandum reporting on the initial review of chromium cleanup standards that I requested in November 2003, and I concur in her recommendations as follows:

- The Division of Science, Research and Technology should convene the workgroup as proposed to review application of current chromium standards and any revised standards. The review shall include a process for informal consultation with scientists and community organizations that have raised objections to the Department's past handling of chromium standards.
- The Assistant Commissioner should suspend issuance of no-further-action letters (NFAs) for sites or portions of sites presenting chromium contamination. If protection of public health and the environment or other objectives militate for a departure from this policy, the Assistant Commissioner may seek a waiver from the Commissioner.

c: Jeanne Herb